SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1934

No. 648

HAROLD E. WEST, J. FRANK HARPER AND STEUART PURCELL, CONSTITUTING THE PUBLIC SERVICE COMMISSION OF MARYLAND, APPELLANTS,

vs.

CHESAPEAKE AND POTOMAC TELEPHONE COMPANY OF BALTIMORE CITY

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF MARYLAND

VOL. I

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[fol. 3]

IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF MARYLAND

In Equity

No. 2240

THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY OF BALTIMORE CITY, a Corporation, Plaintiff,

vs.

HAROLD E. WEST, J. FRANK HARPER, and STEUART PURCELL, the Persons Constituting the Public Service Commission of Maryland, Defendants

BILL OF COMPLAINT—Filed December 13, 1933

To the Honorable the Judge of the District Court of the United States for the District of Maryland:

The Bill of Complaint of The Chesapeake and Potomac Telephone Company of Baltimore City, plaintiff, against Harold E. West, J. Frank Harper and Steuart Purcell, the persons constituting the Public Service Commission of Maryland, defendants, respectfully shows:

I

The plaintiff, The Chesapeake and Potomac Telephone Company of Baltimore City, is a corporation duly organized and existing under and pursuant to the laws of the State of Maryland, having its principal office in the City of Baltimore, State of Maryland; and during all the times herein referred to has owned and operated a telephone sys-[fol. 4] tem in and throughout the State of Maryland, furnishing to the public both intrastate and interstate telephone service.

II

The defendants, Harold E. West, J. Frank Harper and Stuart Purcell, are the persons constituting the Public

Service Commission of Maryland, which is an administrative body duly created by the statutes of said State (Code of Public General Laws of Maryland, Article 23, Title: Corporations, Sub-Title; Public Service Commission), and they are hereafter referred to collectively as the Public Service Commission. Said defendants are citizens and residents of the State and District of Maryland. The Public Service Commission is charged with the power and duty of carrying out the provisions of the Public Service Commission Law of Maryland and the acts of these defendants hereinafter complained of, were taken by them under the pretended authority of said law.

III

This suit is of a civil nature in equity and brought for the purpose of enjoining the enforcement of a certain order of said Public Service Commission dated November 28, 1933, hereinafter more specifically referred to, by which order plaintiff is "directed and required to file with the Commission not later than December 20, 1933, amended schedules of rates and charges for telephone service furnished by the said company, which, when accepted by the Commission and made effective, will result in a reduction of approximately $1,200,000 in the gross annual revenues of the said Company; and to charge, in accordance with the said amended schedules, for all service rendered and billed on and after January 1, 1934."

[fol. 5] This suit arises under the Constitution and laws of the United States in that the order of said Commission and any rates and charges to be made effective thereunder are unjust and unreasonable and confiscatory of the plaintiff's property used and useful in furnishing to the public telephone service within said State, and said order therefore seeks to deprive plaintiff of its property without due process of law, and denies plaintiff the equal protection of the laws, in violation of its rights under the Fourteenth Amendment of the Constitution of the United States. Said order is therefore null and void as is shown more fully hereinafter.

The amount in controversy in this suit exceeds the sum or value of $3,000, exclusive of interest and costs.

IV

The rates for telephone service now being charged by plaintiff are, with certain minor exceptions, rates which were duly filed by plaintiff with the Public Service Commission in pursuance of its Order No. 8889 dated March 18, 1925, and the said rates, except as modified in minor respects, as above mentioned, have been continuously in effect since April 1, 1925, up to this time.

V

On January 19, 1933, the Public Service Commission of its own motion instituted an investigation of the rates and charges of plaintiff. Thereafter hearings were had, commencing on May 2, 1933, and ending on or about September 18, 1933. On November 28, 1933, the Public Service Commission entered its formal order No. 24065 in said Case No. 3424, "In the Matter of the Rates and Charges of The Chesapeake and Potomac Telephone Company of [fol. 6] Baltimore City," which order, including an opinion of the same date made a part of said order by reference therein, is hereto annexed, made a part hereof and marked Plaintiff's Exhibit A.

By said order the Commission finds the existing rates of plaintiff to be unjust and unreasonable, and directs and requires plaintiff to file with said Commission not later than December 20, 1933, amended schedules of rates and charges for telephone service furnished by plaintiff which, as already quoted, "will result in a reduction of $1,200,000 in the gross annual revenues of the Company"; plaintiff being ordered to charge in accordance with said amended schedules for all service rendered and billed on and after January 1, 1934. The order further provides that it shall become effective as of the date thereof (November 28, 1933) and shall remain in effect until the further order of the Commission in the premises.

The return to the plaintiff from its intrastate business under such rates as it would be permitted to charge by said order will be less than a fair return upon the fair and reasonable value of its property used or useful in furnishing its intrastate telephone service in the State of Maryland, and exclusively devoted to the rendition of that service, as hereinafter more fully set forth.

VI

As of December 31, 1932, the cost of the property of plaintiff in the State of Maryland, used and useful in furnishing its intrastate telephone service to the public and exclusively devoted to the rendition of that service, the cost of reproduction of said property, the cost of reproduction of said property less depreciation, and the fair and [fol. 7] reasonable value of said property, respectively, are as follows:

Cost of said property of plaintiff (including Working Capital and excluding Going Value)	$44,830,252
Cost of reproduction of said property (including Working Capital and Going Value)	$47,363,233
Cost of reproduction of said property less depreciation (including Working Capital and Going Value)	$41,829,532
Fair and reasonable value of said property (including Working Capital and Going Value), not less than	$41,829,000

The foregoing statements of cost of reproduction, reproduction cost less depreciation, and of fair and reasonable value, include nothing on account of the item of franchises, but do include the item of Going Value, the amount attributed to such item of Going Value being not in excess of 9% of the cost of reproduction, of 10.4% of the cost of reproduction less depreciation, and of 10.4% of the present fair and reasonable value of said property.

The foregoing statement of cost of said property to the plaintiff includes nothing on account of any item of franchises or the item of Going Value.

Said cost to plaintiff of its property used and useful in its intrastate telephone business in the State of Maryland has been diminished, since December 31, 1932, during the periods hereinafter mentioned, by the following amounts, being the net excess, during such periods respectively, of property removed from service over additional property acquired, viz:

[fol. 8] January 1 to June 30, 1933, inclusive (net reduction)	$112,495
January 1 to October 31, 1933, inclusive (net reduction)	$ 24,557

January 1 to December 31, 1933, inclusive (net reduction) ..... $ 821

(Partly estimated.)

VII

The plaintiff's net earnings derived from its intrastate telephone business within the State of Maryland, under its existing rates, stated as a rate per cent annual return upon the fair and reasonable value of its property used and useful in furnishing said service and exclusively devoted to the rendition thereof, have been not in excess of the amounts and percentages set forth below. Said fair and reasonable value of plaintiff's property averaged over the yearly periods set forth below, is not less than the amounts there set forth for said respective yearly periods, and is based on the fair and reasonable value of plaintiff's property as of December 31, 1932, from which have been deducted the amounts of net reductions of plaintiff's property, averaged for said respective periods aforesaid:

	Year 1932	12 Months ended June 30, 1933	Year 1933 (adjusted)
Net Earnings (depreciation allowance based on value)	$2,391,785	$2,222,984	$2,082,080
Value (averaged)	41,830,000	41,825,000	41,763,000
Per cent Return, not in excess of	5.8%	5.4%	5.0%

[fol. 9]

VIII

The plaintiff's net earnings derived from its intrastate telephone business within the State of Maryland, under its existing rates, stated as a rate per cent annual return upon the cost to plaintiff of its property used and useful in furnishing said service and exclusively devoted to the rendition thereof, have been not in excess of the amounts and percentages set forth below. Said cost of plaintiff's property is not less than the amounts set forth for the respective yearly periods, having been similarly averaged for such respective periods.

	Year 1932	12 Months ended June 30, 1933	Year 1933 (adjusted)
Net Earnings (depreciation allowance based on cost)	$2,316,729	$2,152,144	$2,017,884
Investment Cost	44,832,023	44,826,494	44,764,596
Per cent Return, not in excess of	5.2%	4.9%	4.6%

IX

The telephone business of plaintiff within the State of Maryland has been conducted efficiently and economically during all the times herein referred to and is now being so conducted.

X

The fair annual rate of return which the plaintiff is entitled to earn under rates imposed upon it by public authority is an amount equal to not less than 7½% upon the fair and reasonable value of its property used and useful [fol. 10] in the rendition of the service covered by the rates in question, and upon any rate base computed from such fair and reasonable value.

XI

The rates of plaintiff for telephone service, heretofor established as stated in Paragraph IV hereof, and now in force and effect, are not more than just and reasonable rates, and are not yielding to plaintiff in excess of a fair return.

XII

Plaintiff's net earnings derived from its intrastate telephone business within the State of Maryland, by said order of November 28, 1933, here complained of, are intended to be and will be reduced by not less than the sum of $1,000,000 per annum. Said order will not permit plaintiff to earn a fair return upon the fair and reasonable value of its property within the State of Maryland, used and useful in furnishing to the public its intrastate telephone service and exclusively devoted to the rendition of that service. Said order is therefore unlawful and confiscatory in effect and is therefore null and void, and the same if enforced would deprive plaintiff of its property without due process of law and deny to plaintiff the equal protection of the laws, in violation of its rights under the provisions of the Fourteenth Amendment of the Constitution of the United States.

XIII

If said order is enforced and plaintiff is compelled to charge rates and make charges in compliance therewith,

plaintiff, though practicing all reasonable economy consistent with adequate and efficient service to the public, will [fol. 11] be prevented from earning any return in excess of 2.6% per annum upon the fair and reasonable value of its property in the State of Maryland, used and useful in furnishing to the public its intrastate telephone service, and exclusively devoted to the rendition of that service, and from earning any return in excess of 2.3% per annum upon the cost of said property.

XIV

Unless the defendants are restrained and enjoined as herein prayed, they will, as plaintiff believes and so alleges, attempt to compel the plaintiff to comply with said Order No. 24065, dated November 28, 1933, of the said Public Service Commission, and in the event of non-compliance with it will attempt to enforce the penalties prescribed by the laws of the State of Maryland, and the plaintiff, its directors, officers, agents and employees will be compelled to file amended schedules of rates and charges, as in said order provided, and will be deterred and prevented by the threat of said penalties from charging lawful rates and from charging any rates other than rates which will reduce the plaintiff's gross revenues by $1,200,000; and thereby the plaintiff will be forced to submit to the confiscation of its property without due process of law and in violation of its rights under the Constitution of the United States, as hereinbefore alleged, and will be subjected to great and irreparable loss and damage.

XV

Unless the defendants are restrained and enjoined as herein prayed, the plaintiff's subscribers will, as plaintiff believes and so alleges, be induced and caused to resist and [fol. 12] refuse payment of any rates other than rates reduced as prescribed in and by said order.

The present number of plaintiff's accounts with subscribers in the State of Maryland is more than 140,000, and the present average monthly bill rendered to them on account of telephone service, is less than $7.30. Because of the nature of the business of the plaintiff and the fact that the amounts due monthly from such subscribers are generally small, it is impracticable for the plaintiff to enforce collec-

tion thereof by actions at law. Plaintiff has no practical way to enforce collection of its rates and charges except by cutting off and refusing service upon default in payment of its bills rendered monthly therefor, and its subscribers will, as plaintiff believes and so alleges, institute large numbers of suits in various jurisdictions throughout the State, to restrain plaintiff from cutting off and denying service for non-payment of bills and for damages, and plaintiff will thereby be subject to endless multiplicity of suits.

The issues which would be presented in each such suit, are presented, and should and will be decided, in this action.

XVI

Plaintiff has no plain, speedy or adequate remedy at law.

Wherefore, the plaintiff prays:

1. That said Order No. 24065, dated November 28, 1933 (Plaintiff's Exhibit A filed herewith), be decreed to be confiscatory and unlawful and in violation of the Con-
[fol. 13] stitution of the United States, and that said order be decreed to be void.

2. That defendants, and each of them, and all other persons, be temporarily and permanently restrained and enjoined from any attempt to compel plaintiff, its officers, agents or employees, to observe or put in force on January 1, 1934, or to observe or keep in effect thereafter, any schedule of rates and charges for telephone service reducing the revenue of plaintiff, as required by said order of November 28, 1933, No. 24065.

3. That the defendants, and each of them, and all other persons, be temporarily and permanently restrained and enjoined from taking or initiating any steps or proceedings against plaintiff, its officers, agents or employees, to enforce any penalties or any other remedy for disregarding the requirements of said order No. 24065, dated November 28, 1933.

4. That the plaintiff have such other and further relief as may be just and equitable in the premises.

May it therefore please the Court to grant unto the plaintiff the writ of subpœna of the United States, is-

suing out of and under the seal of this Honorable Court, directed to said defendants, Harold E. West, J. Frank Harper and Steuart Purcell, the said persons constituting the Public Service Commission of Maryland, commanding them, and each of them, on a day certain to be named therein, to be and appear before this Honorable Court, then and there to answer (but not under oath, answer under oath being hereby expressly waived), all and singular premises; and to perform and abide by such orders, directions or decree as may be made against them in the premises; and pending the final hearing of this cause, to grant unto the [fol. 14] plaintiff a temporary restraining order and interlocutory injunction, as above prayed.

The Chesapeake and Potomac Telephone Company of Baltimore City, by Lloyd B. Wilson, President. Charles McHenry Howard, Raymond S. Williams, Ralph A. Van Orsdel, T. Baxter Milne, Solicitors for Plaintiff.

Duly sworn to by Lloyd B. Wilson. Jurat omitted in printing.

PUBLIC SERVICE COMMISSION
OF MARYLAND

OPINION

In the Matter of The Rates and Charges of THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY OF BALTIMORE CITY	Before the Public Service Commission of Maryland Case No. 3424

Appearances of Counsel:

JOHN HENRY LEWIN, *People's Counsel.*

RANDOLPH BARTON, JR., and FORREST BRAMBLE, *for Retail Merchants Association.*

R. A. VAN ORSDEL, RAYMOND S. WILLIAMS and T. BAXTER MILNE, *for The Chesapeake and Potomac Telephone Company of Baltimore City.*

Other Appearances:

Dr. Thomas B. Symons, B. J. Black and David G. Harry, for Maryland State Grange; Miles H. Fairbank, for Maryland Farm Bureau Federation; T. Roy Brooks, for Pomona Grange of Harford County; E. W. Haviland, for Pomona Grange of Montgomery and Howard Counties; John S. Bushey, for Pomona Grange of Carroll County; Erman A. Shoemaker, for Berrett Grange No. 325; James A. Berger, for Elkhorn Farmers' Club of Howard County; Miss Aimee Weber, for National Housewives, Inc.; James F. Rafferty, for Cockeysville Improvement Association; Walter Gilliam, for Larchmont Community Improvement Association; William J. Grove, for M. J. Grove Lime Company; and Edro Richardson, for Edro Richardson Brass Company.

By the Commission: Filed November 28, 1933.

This investigation of the rates and charges of The Chesapeake and Potomac Telephone Company of Baltimore City, Case No. 3424, was instituted by the Commission, of its own motion, on January 19, 1933, and hearings were begun on May 2, 1933, approximately three and a half months later. Testimony was taken on thirty-six days, a period of seven weeks was allowed counsel for the preparation of argument, five days were taken up by argument of counsel and the case was finally submitted to the Commission for consideration on September 18, 1933. In the course of the hearing 6464 pages of testimony were taken and 133 exhibits filed, 85 by People's Counsel and 48 by the Company, all of which had to be studied and analyzed by the Commission before it could reach a conclusion. Memoranda of argument, with cases cited, were also filed by counsel.

The Retail Merchants Association and the Mayor and City Council of Baltimore intervened in the case. The Retail Merchants Association was represented by Mr. Randolph Barton, Jr., and Mr. Forrest Bramble, who cooperated in the presentation of the case for the people with Mr. John Henry Lewin, People's Counsel.

The proceeding grew out of a conviction on the part of the Commission that, in view of the general decline in values of all property, the public was entitled to a reduction in the rates charged by utilities generally and that such reductions should be based on the value of utility properties at present day prices. Acting on this conviction, the Commission, when it became convinced that the lower level of prices was not merely temporary, but that, to use the words of Chief Justice Hughes of the United States Supreme Court in the opinion in the Los Angeles case, we were "upon a changed economic level," began discussions with utility managers throughout the State looking to a lowering of their charges.

It was realized by the Commission at the outset that if it undertook formal rate proceedings in all these cases it would be many years before they all could be heard and determined, and that the benefits of such reductions as were due the public would not be obtained when most needed. A simple method

was followed by the Commission in these discussions. All the major utilities of the State, with one exception, had been valued by the Commission in previous years, and in the one case valuation proceedings were being concluded. The Commission applied standard index numbers to the valuations previously found in order to get present day value of the properties, and computed the companies' net earnings on the valuations thus indicated in order to obtain the rate of return on what could, for all practical purposes, be regarded as present day value. Negotiations were carried on with utility officials on this basis, and concessions in rates were secured in almost all cases. While the reductions in rates secured by this method may not have been the maximum amounts to which the public was entitled, the fact that the reductions were immediate compensated for not realizing the maximum amount of reduction.

Negotiations, such as described, were carried on with officials of The Chesapeake and Potomac Telephone Company of Baltimore City. They extended over several months, and were fruitless so far as reductions in rates were concerned. The Company contended that the falling off in its revenue more than offset the effect of any decrease in the value of its property such as might be indicated by the use of index numbers and, moreover, that indices applying to the Company's particular property would not indicate any decline whatever. The Company's officials expressed a hope that if business picked up a reduction might be in order at some future time, but they contended that it was not possible to agree to any reduction at the time negotiations were in progress.

The Commission was not convinced of the soundness of the Company's position and, believing that there was room for a reduction in rates, ordered a formal hearing in the matter. In doing so it dismissed any opinions previously formed, and entered upon the proceeding with an open mind. It has been guided throughout in this proceeding by the evidence submitted to it, and which is contained in the record of the hearing.

The appraisal of the Company's property was made as of December 31, 1932, and adjusted to the estimated average value for the year 1933.

Reports of the Company submitted to the Commission each month indicated a value as of December 31, 1932, of $48,073,433 with an average valuation for the year 1932 of $48,378,879. This was arrived at by the Company by using the value fixed by this Commission as of December 31, 1924, in the amount of $33,399,530. Net additions to the property from that date to December 31, 1932, were added to bring the value up to $48,073,433 as of that date.

Total telephone revenues for the year 1932 were shown by the Company's reports to be $13,359,712.

Total telephone expenses were $10,522,936, resulting in an operating income of $2,836,776.

The cost of the Company's property, as of December 31, 1932. less depreciation and going value, as shown on its books was:

Gross Cost	$49,990,583
Depreciation Reserve	10,229,980
Net Cost	$39,760,603

On this basis the average net return for the year was 7.13 per cent.

COMPANY'S CLAIM OF VALUE AND RETURN

In presenting its case to the Commission at the hearing the Company claimed a total reproduction cost new of its property of $54,513.618 and a reproduction cost less depreciation of $48,144,672 (Cmpany's Exhibit No. 12). On this it claimed the right to earn a return of 7½ per cent., which would amount to $3,610,850.

This would amount to a return of 9.08 per cent. on the net cost of its property, $39,760,603.

It would amount to 11.11 per cent. of what the Commission believes to be the fair average value of the property in service in 1933, as shown below.

The sum which the Company claims the right to have as return, $3,610,850 (7½ per cent. on $48,144,672), is $774,074 greater than its operating income, as shown by its books, for 1932, which indicates that the Company actually seeks an increase in rates.

COMMISSION'S FINDING OF VALUE AND RETURN

The Commission finds the undepreciated fair value of the Company's property used and useful in the public service, and including working capital, to be $40,527,917, as of December 31, 1932. It finds the fair value less depreciation as of December 31, 1932, to be $33,210,000, and the average value of property in service in 1933 to be $32,498,094. A return of 6 per cent. on this 1933 value will yield $1,949,886, whereas the Commission estimates a return of $3,353,793 for 1933, on present rates. This indicates a reduction in return amounting approximately to $1,396,522.

In view of the generally unsettled condition of business, and of the National Administration's efforts to increase prices, which have been effective to the extent of 13.1 per cent. as indicated by the All Commodities trend for September, the Commission feels that a reduction of $1,000,000 only in net revenues of the Company should be made at this time and will so order. This will amount to a reduction of $1,200,000 in gross revenues.

SET UP OF COMPANY'S CLAIM

The Company's claim for values, as of December 31, 1932, as determined by what may be termed its composite method of reaching them, is shown by Company's Exhibit No. 12, as follows:

	Cost New Reproduction	Condition Per Cent.	Reproduction Cost Less Depreciation
Directly Distributed Costs			
1. Land—Baltimore City only	$ 496,436	100.00	$ 496,436
2. Buildings	2,391,162	94.12	2,250,558
3. Central Office Telephone Equipment	9,002,782	90.17	8,117,809
4. Multiple P. B. X. Equipment	439,756	90.00	395,780
5. Other Station Equipment	6,018,825	85.00	5,116,001
6. Pole Lines	4,931,706	77.50	3,823,119
7. Aerial Cable	4,031,703	85.00	3,426,948
8. Aerial Wire	1,951,003	85.00	1,658,353
9. Underground Conduit	4,034,822	85.00	3,429,599
10. Underground and Submarine Cable	5,582,781	90.00	5,024,503
11. Total Directly Distributed Costs for Items Indicated	$38,881,036	86.77	$33,768,106

Undistributed Construction Costs			
12. Contingencies	$ 777,621	.....	.....
13. Engineering	2,379,519	.....	.....
14. Administration and Legal	1,261,145	.....	.....
15. Insurance and Taxes	543,032	.....	.....
16. Interest During Construction	2,422,860	.....	.....
17. Total Appraised	$46,265,213	86.77	$40,144,325
Properties Not Specifically Appraised			
18. Land—Outside Baltimore City.	$ 132,882	100.00	$ 132,882
19. Right of Way	934,220	100.00	934,220
20. Other Equipment of Central Office	308,891	85.00	262,557
21. General Equipment	672,412	70.00	470,688
22. Total Estimated Reproduction Cost of Physical Property as of December 31, 1932	$48,313,618	86.82	$41,944,672
23. Going Value	4,500,000	.....	4,500,000
24. Working Capital	1,700,000	.....	1,700,000
25. Total	$54,513,618	.....	$48,144,672

Note with respect to Reproduction Cost New.
Items 1 and 2 were determined by field appraisal.
Items 3, 4 and 5 were arrived at by the Company's own index numbers.
Items 6 to 10, inclusive, were developed by an office appraisal.
Items 12 to 16, inclusive, and 23 were developed for the Company by engineers employed by it.
Items 18 and 19 are actual book costs.
Items 20 and 21 were arrived at by an arbitrary reduction of book costs.
Item 24 was estimated by Company accountants.
Per Cent. Condition was determined by partial observation by engineer.
No depreciation is shown for Item 19, although $211,241 has been accrued for this item since 1923, of which sum $106,019 has been expended.

USE OF INDEX NUMBERS

Both the Company and the Commission realized that to attempt to find the present day fair value of the Company's property by the usual method of taking an inventory of all items of property owned by the Company and pricing out those items at present day prices would not only take at least two years of constant work but would cost the Company not less than $300,000 and cost the State a very sustantial sum. It was agreed that index numbers should be used in arriving at present day costs. The Commission's staff carried this index number process through the entire appraisal except in the case

of working capital. The Company, while it used index numbers, followed a method substantially at variance with the Commission's method.

The Commission felt that the use of index numbers for finding value in this case was justified, not only because the Statutory Court in the 1924 case used the index number method in arriving at the fair value of this same Company's property as of December 31, 1923, and because it had been used by the Supreme Court of the United States in determining certain elements of value, but also because in a recent case before the Commission (Case No. 3074) a distinguished engineer testifying for the utility involved stated that a result within 5 per cent. of accuracy could be obtained (Record, p. 5760) by the use of index numbers. The Commission is convinced that so close an agreement between two appraisals, independently made, cannot possibly be obtained by the use of the ordinary method of inventorying and pricing. In no case with which the Commission is familiar do index numbers produce results which vary as widely as does the testimony of expert witnesses on opposite sides in a valuation case; and while in this particular case there is a material difference between the use of index numbers by the accountants of the Commission and accountants and engineers of the Company, that difference is readily explained, as will be done further on in this opinion.

The Company did not rely upon index numbers in finding the value of its property to nearly so great an extent as did the People's Counsel. It used them in connection with its central office equipment, multiple private branch exchanges or P. B. X's., and other station equipment. These were the elements of property purchased from the Western Electric Company. For land and buildings it had a field appraisal; for aerial cable, aerial wire, underground conduit, and underground and submarine cable it had an office appraisal; it took book cost for land outside Baltimore City and rights of way; and for general equipment and central office equipment, whose value was not measured by index numbers, it took adjusted book costs. It offered testimony of engineers to support its claims for the amounts of its overheads. The sum of the results obtained by these various methods, less an average depreciation

of 13.18 per cent. in its physical property, it claimed as the value of its property as of December 31, 1932, as will appear from Company's Exhibit No. 12 heretofore referred to.

RESULTS OF COMPANY'S PLAN

From the outset, the Company contended that the index numbers used by the Commission's Auditor, being general in their character, could not properly be applied to its property, and that it would only be proper to use for this property index numbers applying specifically to it, by accounts, embracing only such items as are contained in the property and weighting the various items according to the proportions they bear, respectively, to the total value in the account. Therefore, the Company's use of such numbers was confined to numbers which were developed solely from an analysis and comparison of the costs of telephone property as shown by its books and which had been bought from the Western Electric Company.

The Company's method produces curious results. For instance, the index numbers for the years 1924 to 1932, inclusive, developed by this method, reveal that for only four of those years were prices higher than they were on December 31, 1932, and that for 1927 the index number was substantially the same as that for December 31, 1932. While the Company index numbers for 1924 to 1927, inclusive, are higher than that of 1932, it is somewhat singular to find the numbers for the five years from 1928 to 1932, inclusive, indicate that prices were lower during those years than they were on December 31, 1932. These numbers indicate a situation so at variance with the experience of people generally not only of this country but of the world—a situation described by the Supreme Court as "a new experience to the present generation"—that this Commission feels that they cannot possibly show the actual present day value of the Company's property. For a relatively low value of the property would be obtained by using the index number shown in a time of high prices, 1929 for instance, while relatively high values would be found by using the index numbers given for years when prices were low. This also is contrary to the Company's experience, for in 1924 it claimed a higher than cost value for its rate base because prices then were high. It seeks

now a high rate base, and an increased rate of return, when prices are low.

POSSIBLE PROFIT FROM DEPRESSION

Such claims do not seem reasonable to this Commission. In testing the reasonableness of results obtained by the application of index numbers to the Company's property, the Commission feels it is justified in taking notice of the common experience of mankind, that there has been since late in 1929 a downward trend in prices to such an extent that unprecedented measures have been taken by the Federal Government to check it and to relieve the nation-wide distress caused thereby. It is an unavoidable consequence of such a condition that the fair value of a property employed in the public service and charged with a public interest should be subject to the general changes in the value of the dollar, and that its fair value must be less than the price which its books show was paid for it in times of higher prices; just as the value of the property was found by the Court to be greater in 1924, when prices were high, than the books showed had been paid for it.

People's Counsel Exhibit No. 9 shows that 98 per cent. of the Company's property was acquired between January 1, 1918, and December 31, 1932. It is common knowledge that substantially all of this period was one of high prices and it inevitably follows that present day value must be less than book cost.

It is apparent to the Commission that if the Company were permitted now to earn the same rate of return allowed in 1924 and subsequent years upon a rate base equal to the value of property determined then, and the cost of property purchased since in years of high prices, then its owners would actually profit by the world-wide depression which has, so generally, brought financial loss and distress to the rate payers. For while its stockholders would receive their dividends in the same number of dollars, they would get dollars of superior purchasing power. Their *real* return in bad times, therefore, would be greater than the return in good times, and the longer the depression continued, the greater would their harvest be.

We believe that the soundness of the Commission's position in this matter is upheld by the Supreme Court. In the case of *Willcox vs. Consolidated Gas Company*, 212 U. S. 19, the Court said:

> "There must be a fair return upon the reasonable value of the property at the time it is being used for the public. * * *
>
> "And we concur with the court below in holding that *the value of the property is to be determined as of the time when the inquiry is made* regarding the rates. If the property which legally enters into the consideration of the question of rates has increased in value since it was acquired, the company is entitled to the benefit of such increase." (Italics ours.)

Chief Justice Hughes in his opinion in the case of *Los Angeles Gas and Electric Corporation vs. Railroad Commission of California, et al*, P. U. R. 1933 C, 229, decided by the Supreme Court May 8, 1933, said:

> "The actual cost of the property—the investment the owners have made—is a relevant fact * * *. But while cost must be considered, the court has held that it is not an exclusive or final test. The public have not underwritten the investment. The property, on any admissible standard of present value, *may be worth more or less than it actually cost.* The time and circumstances of the outlay, and the *effect of altered conditions demand consideration.*" (Italics ours.)

And in the *Indianapolis Water Company* case, 272 U. S. 400, the Court said:

> "It is well established that values of utility properties fluctuate, and *that owners must bear the decline and are entitled to the increase.* * * * The high level of prices and wages prevailing in 1922 and 1923 should be taken into account in finding value as of January 1, 1924, and in the years immediately following." (Italics ours.)

Therefore, unless the Company wishes the Commission to believe that the courts declare that what goes up cannot come

down, if the Commission found value greater than cost when prices were high it would expect to find value lower than cost when prices were low.

HOW COMPANY'S INDICES WERE BUILT

So much for the general situation. Some detail of the method used by the Company in building up its index numbers may be helpful. The Company classified the Central Offices into five types, then selected one Central Office in each of these groups and appraised that Central Office for each year from 1923 to 1932. It worked up index numbers on each Central Office regarded as typical of its group. It assumed that the index numbers for all Central Offices in the same group would be the same as the index numbers of the typical office of its group.

The Vernon Office was taken as being typical of the Large Manual Common Battery Central Offices. There are 17 offices in that group. Of the items in the Vernon Office 80 per cent. were appraised. The Vernon Office represented approximately 10 per cent. of the total cost of all the Large Manual Common Battery Offices. This indicates that not more than 8 per cent. of the items in the Large Common Battery Central Offices were appraised. The Company assumed that the balance, or 92 per cent., trended as had the 8 per cent. It assumed also that the value for each Large Common Battery Central Office would change as the value of the Vernon Office changed, although in some years only minor additions had been made to the Vernon Office and substantial additions and new construction occurred in other offices.

For the automatic or Dial Offices the Exchange at Germantown, Pennsylvania, was selected, this office having been appraised 100 per cent. and an analysis of that appraisal made by the American Telephone and Telegraph Company. This office is not the property of The Chesapeake and Potomac Telephone Company of Baltimore City, and is not in Maryland. The cost of the Germantown Office was approximately 29 per cent. of the cost of the Dial Offices of The Chesapeake and Potomac Telephone Company of Baltimore City. The 80 per

cent. was assumed to trend in the same manner as the 20 per cent.

For the Small Common Battery Offices the Frederick Office was chosen as typical. Of that office 80 per cent. was appraised, and as the office represents about 8.3 per cent. of the Small Common Battery Offices, only 6.6 per cent. of the Small Common Battery Offices were appraised and the balance of 93.4 per cent. was assumed to trend as the 6.6 per cent.

Silver Run was selected as typical of the Magneto or Local Battery Offices, and it was appraised 100 per cent. It represents about 1 per cent. of the total Magneto or Local Battery Offices, and the 99 per cent. balance was assumed to trend as the 1 per cent. trended.

The Frederick Office also was chosen as being typical of Toll Terminal Equipment studies. Of such equipment in the Frederick Office 90 per cent. was appraised. This represented 18 per cent. of the total.

When new units of property were encountered in building up the index numbers, these were put in the index for the year following their acquisition, so that to this extent the index was always a year late. Retirements were treated in the same way. Prices used were the list prices of the Western Electric Company, such as the Telephone Company is entitled to receive under its contract with the Western Electric, and incidentally what the Company must pay. Western Electric material prices and installation labor costs also are included to a considerable extent in the compilation of the Company's index numbers. As Western Electric prices were actually increased three times after 1929, after the general price decline had set in, this accounts, at least in some measure, for what might be termed the erratic course of the Company's price trends. One of these increases occurring in 1931 amounted, according to a letter of the Company's Chief Engineer, Mr. Speer, to 20 per cent., and a request for an increase in the local Company's budget allowance had to be made by him in order to cover the increased cost. (People's Counsel Exhibit No. 69.)

The Company explains that as to its Central Office Telephone Equipment and Multiple Private Branch Exchange Equipment it does not maintain a current inventory of all the

pieces of apparatus assembled into Central Office Equipment units. The investment in each Central Office, however, is recorded on the books by the location of the office. A detailed record of costs at each location is maintained, as well as records which make possible the ascertaining of original cost of any portion of a unit that may be retired. The Company claims that it is able to take out the retirement as of the year of placement, and thus obtain in dollars the amount of the original investment still in service in 1932 and the amount of additions made each year which also were in service as of December 31, 1932.

It was in order to develop indices to put these dollars on a 1932 basis that the Central Offices of the Company were put in five groups, each group containing the same general character of equipment, and the selection of a typical Central Office from each group. An inventory of the principal items of equipment in each typical Central Office was taken, which inventory, while including, as already pointed out, only a small portion in number of the pieces of apparatus in the office, aggregated in dollars the greater part of the investment in that Central Office. This inventory was made as of December 31, 1923, and as of the end of each year thereafter. The equipment in place in December, 1923, was appraised at costs included in the Robinson appraisal of 1923 and the inventory at the beginning of each year after was priced out at prices in effect at the beginning and at the end of each year. Ratios between the costs at the end of each year compared with the costs at the beginning of each year were developed, and a chain index thus constructed which the Company claims equated all the costs into terms of December, 1932, costs.

In justification for the use of the Robinson appraisal as a starting point, for this purpose, the Company asserts that, as Mr. C. A. Robinson, then the chief engineer of the Company, had appraised all the plant of the Company in service as of 1923 at 1923 unit costs regardless of when it was purchased, such an appraisal would have no other effect than to put all the units of property appraised by him on a common cost level. If it is assumed, the Company contends, that all the units of property appraised by Robinson in 1923 on such common cost

level were still in service as of December 31, 1932, the application to the Robinson appraisal costs of an appropriate translator developed from the ratio of Robinson's costs to present day costs, would equate the appraisal cost as of 1923 to the cost level of 1932 and this would hold true no matter whether the Robinson appraisal costs were high or low.

It appears, however, from pages 5 and 6 of Company Exhibit No. 7 that the largest addition to Central Office Equipment since 1924 was in 1930 and that addition was translated not by a low translator but by a high one, 107.4, which would indicate a present day value of 7.4 per cent. more than this addition actually cost.

When we consider Multiple Branch Exchange Equipment we find the largest addition occurred in 1929, which addition is trended by a translator of 112.6, indicating a present day price of 12.6 per cent. higher than cost. The explanation might be that the translators shown on pages 5 and 6 of Company Exhibit No. 7 were developed largely from the charges made by the Western Electric Company which have been increased during the low price period since 1929 instead of being decreased as prices of other commodities have decreased.

Page 8 of Company Exhibit 7 gives the Company's estimated value of its Station Equipment as shown by index numbers worked up for this item of property, beginning in 1923 with the Robinson unit costs. As the Company was unable to identify the years in which Station Equipment was put into service, it worked out a separate index appraisal for retirements, these being made on an average cost and not on original cost. It appears that when retirements are taken out they come out in most cases at translators lower than those applied to additions. In 1926, for instance, additions were translated at 91.4, retirements at 86.4; in 1927 additions at 97.1, retirements at 86.6; in 1928 additions at 94.6, retirements at 89.1; in 1929 additions at 97.8, retirements at 89.4; in 1930 additions at 100.1, retirements at 90.1; in 1931 additions at 94.9, retirements at 91.3. The use of such figures naturally would show too high a value for Station Equipment remaining in service. It also appears that unit costs of Station Equipment increased 25 per cent. according to the exhibit from 1923 to 1932, not

withstanding page 8 of Exhibit 7 shows a decrease in price of about eight points between 1923 and 1932.

It is also worth noting that in 1927 the Company purchased a large number of used telephone instruments from the American Telephone and Telegraph Company at about 80 per cent. of the cost of new instruments in that year. Instead of using the cost figure as the base for trending the value of those instruments it takes the current price new of the instruments in 1927 and trends that price. This was justified by the Company's accountant, Mr. Harry C. Gretz, by saying that he relied upon the witness Sloan (Mr. W. F. Sloan), who testified as to depreciation, to observe any depreciation in the instruments. It is a fact, nevertheless, that the instruments cost much less than the amount trended and, as Mr. Sloan in his inspection of approximately 10 per cent. of the instruments gave no weight at all to deterioration caused by age, it would seem that an unduly large value is being claimed for those instruments.

For the Outside Plant Account the Company's books are in detail, and the Company claims to have a running record or complete inventory of this class of property and that if considerations of time and expense had not made it impracticable it would have been possible to develop unit cost, as of December, 1932, for each item of this account and to price out these units and obtain a complete reproduction cost of the entire Outside Plant Account.

Instead of doing this the Company picked out certain items in each of the classes of property in this account which they say are representative of the whole and of the most value. The most numerous class of poles, for instance, which class has the greatest total value, is the 25 foot pole. There are 126,000 of such poles while there are only a thousand 50 foot poles shown in the account. A 50 foot pole, however, being of the same general character and taking the same kind of labor to install, its cost in place would, it is asserted, necessarily bear a fixed relation to the cost in place of the other pole. On such a base, unit costs as of December 31, 1932, were developed by the Company for the principal items representing the larger part of the total value in the account, the ratio of the value of the principal items to the total value in the several classes being as follows:

Exchange and Pole Lines (6 items out of 30) being 82.6 per cent. of the total amount.

Exchange and Toll Aerial Cable (11 items out of 301) being 56.6 per cent. of the total amount.

Exchange and Toll Aerial Wire (4 items out of 20) being 95.8 per cent. of the total amount.

Exchange and Toll Underground Conduit (18 items out of 125) being 81.5 per cent. of the total amount.

Exchange and Toll Underground Submarine Cable (17 items out of 534) being 65 per cent. of the total amount.

Giving a total of Outside Plant (56 items out of 1,010) being 74 per cent. of the total amount.

Unit costs of these principal items were applied in order to obtain a reproduction cost appraisal of the larger portion of the investment in each separate Outside Plant Account.

In order to find the reproduction cost of the remaining items in each account, as the 1923 appraisal contained items similar to those in the accounts for 1932, the 1932 inventory was priced out at 1923 prices, in order to ascertain, as of December 31, 1932, the ratio of the total value in the account, to the value of the principal or sample items the Company had chosen. This ratio was then applied to the December 31, 1932, reproduction cost of the representative items in order to obtain the reproduction cost of all the items comprising the account.

UNDISTRIBUTED CONSTRUCTION COSTS

In building up its unit costs the Company assumed a plan for reproducing its property over a period of six years, considering as the component parts of the material elements of unit costs, major material, freight, other disbursed or minor material, exempt material and supply expense. The major material was priced at Western Electric Company's published prices. Freight was added as a percentage based on Company expense in 1932. Minor material was figured at current prices, exempt material was taken at 5.5 per cent. of disbursed material, including freight, which indicated an average of 5.61 per

cent., while supply expense was taken as 3 per cent. of the total material and costs.

Labor in the unit costs included direct labor, that is, the hours required of the workmen to construct the unit of property at an average hourly rate which included in addition to the amounts actually paid to the workmen an allowance for lost time, vacations, etc., and a loading to cover supervisors, foremen, district superintendents, clerks and the like.

Plant supervision included salaries and expense of general plant manager and his staff and office force with certain incidentals, tool expense, this being the cost of small tools, repairs and depreciation of large tools, and a miscellaneous expense consisting chiefly of automobile and truck expense and travelling expenses of the men.

The experience of the Company was used as the basis for computing the labor elements in the unit cost.

The Company claimed undistributed construction costs amounting to $7,384,177, or 18.99 per cent. of its claim for directly distributed costs, undepreciated. These undistributed construction costs consist of contingencies $777,621; engineering $2,379,519; administration and legal $1,261,145; insurance and taxes $543,032; interest during construction $2,422,860, these making the total $7,384,177.

In following the method adopted by the Company it is apparent that numerous assumptions had to be made. After obtaining unit costs as of 1923 for the units of property owned on December 31, 1932, it assumes that the same relationship exists between the Robinson appraisal prices and 1932 prices of minor items as was found to exist in prices of principal items. Page 9 of Exhibit 7 indicates that the value of Exchange and Toll Lines at 1923 Robinson unit costs are 121 per cent. of the principal items and, accordingly, the total cost in place of principal items as of December 31, 1932, is increased to reach this 121 per cent. Assumptions appear to be made as to inventories, prices, labor costs, exempt materials, supply expense, plant supervision and tool expense, as well as assumptions as to the relationship of the principal items to other items.

The Company asserts that the undistributed construction

costs which, according to its figures, amount to $7,884,177, are just as real and necessary as the cost of any part of its physical property and that there is nothing imaginary about them. There may be nothing imaginary about such costs in themselves, but it seems to this Commission that there is much that is imaginary in the amounts claimed for them by the Company in the present case. Counsel cite several court decisions as well as an extract from this Commission's opinion in Case No. 690 as recognizing the propriety of including allowances for construction overheads. The Commission in its opinion in that case said:

> "* * * those 'construction overheads' *when established*, are just as much a part of the actual cost of the physical property as is the labor and material which have entered into and been directly traced to each separate item of the same." (Italics ours.))

In this case the Commission is not departing at all from the doctrine there laid down. It always gives proper weight to construction overheads, *when established*. It is now giving them precisely the same treatment as was given them by the Court in the 1924 case. The Court took the allowance made in Case No. 690, trended it from the figures of 1914 to December 31, 1923, and allowed the value thus found. The Commission takes the Court's finding of this and all other property of the Company and trends it from the figures found by the Court to the figures of December 31, 1932. Whatever was in them then is in them now, but at present day values.

It must be remembered that the figures submitted by the Company for these items are judgment figures only, based on estimates of what it would cost to build anew the property of the Company which exists in this State, although of course it is known to everybody that neither the Telephone Company's property, or any property like it, has ever been or ever will be reproduced in its entirety. Such properties grow gradually, and therefore the various construction overheads are included in construction costs and their present day value has been determined by the trends which this Commission has applied.

In this connection the claim of the Company for interest during construction, amounting to $2,422,860, is worthy of comment. The Company's books show that that amount is about 700 per cent. higher than the actual expense which the Company has incurred. The claim results solely from the hypothetical six year construction period, and departs from any experience the Company has ever had. As the plant grew gradually it has had in it an interest element which has gone in gradually as the plant has grown. We have, therefore, valued the element of interest actually in the plant as we have valued all other elements which are actually in the plant, and have not substituted something entirely different. If we did otherwise, in order to be consistent we would have to adopt a substitute plant theory and consider the cost of an ideal plant rather than reproduction of the existing plant.

ALL VALUES CONSIDERED

The Commission has not overlooked nor ignored any element of value, tangible or intangible, in the property of the Company. It has given them all due consideration, although it has not treated each separately. It considered all of these elements separately in arriving at its conclusions in the 1924 case, from which the Company appealed to the Court. The Court, as its exhaustive opinion in that case shows, trended them separately in arriving at its lump sum value by applying to the Commission's value the All Commodities Index to bring them up to the value as of December 31, 1923. In its supplemental opinion, filed March 18, 1925, the Commission took the value established by the Court of $29,507,960 and added additions to the fixed capital of $3,813,024, made an additional allowance for working capital of $75,000 and made an allowance for a decrease in depreciation reserve of $3,556, bringing the value up to $33,399,530 as of December 31, 1924.

Therefore, in that treatment the Commission made allowance not only for everything the Court had allowed, but an additional amount, to bring up to date the value of the Company's property on which it was to earn its return. In now trending to present day value the value then found by the Court with the additions allowed by the Commission at that time, it can-

not logically be said that the Commission has failed to include proper and reasonable allowances for overheads.

We think that the reasoning applied by the Supreme Court in the Des Moines Gas Company case, 238 U. S. 153, with reference to going value, applies with equal force to the Commission's method followed in this case as to overheads or undistributed construction costs. In the Des Moines case the Court said:

> "When, as here, a long established and successful plant of this character is valued for rate-making purposes, and the value of the property fixed as the master certifies upon the basis of a plant in successful operation, and overhead charges have been allowed for the items and in the sums already stated, it cannot be said, in view of the facts in this case, that the element of going value has not been given the consideration it deserves, and the appellant's contention in this behalf is not sustained."

PEOPLE'S COUNSEL'S USE OF INDICES

The Commission believes that by the use of standard or general index numbers applied to all elements of the Company's property except working capital, results fair and equitable both to the Company and to the public can be obtained, and the People's Counsel built up his case on that theory. The general index numbers used by him indicate changes in price levels or the relative purchasing power of the dollar from year to year since the last valuation of the Company's property.

Of fifteen basic price trends submitted by People's Counsel, five were based upon commodity prices, five upon cost of building construction, two upon prices of building materials, one upon wages in Baltimore and vicinity, one upon a weighted combination of prices of a number of elements very different in character such as commodities, retail food, rent, clothing, fuel, freight, real estate, stocks and bonds, machinery, automobiles, wages, etc., and one upon cost of telephone and telegraph lines owned by railroad companies. These indices were presented to indicate (1) present fair value, (2) reproduction cost, and (3) the purchasing power of income.

It must be remembered that such use of index numbers was

not at all a novel proceeding. In the 1924 case involving this same Company extensive use of index numbers, compiled by Mr. Gretz of the Company's accounting staff, was made to support the reproduction cost studies made by Engineers Robinson and Sloan. In that case also Dr. J. H. Hollander, the distinguished economist of Johns Hopkins University, testified as to the upward change in price levels and submitted in support of his testimony the All Commodities Index of the United States Department of Labor, Bureau of Labor Statistics. The Court arrived at a value of the Company's property by applying the index numbers submitted by Dr. Hollander to the cost of the property as of June 30, 1914, and to the net additions each year thereafter. Thus the value established by the Court, as of December 31, 1923, was arrived at by the use of general index numbers, but only after a consideration of engineering valuations and all other pertinent facts. It is significant that the All Commodities Index number was used to test the fairness of the engineering studies. It is significant, too, that the index numbers compiled by Mr. Gretz from the Company's experience indicated a higher value than was found by the Court. The Court found the Company's index numbers too high, although not by a great margin, when going value and working capital were eliminated. In other words, the Court felt that the General Commodities Index number, applied to the property, disclosed its correct value.

The problem before the Commission has been to measure the decrease from cost of the Company's property to its present value as of December 31, 1932. Instead of making a multitude of assumptions, as did the Company, People's Counsel took the position, with respect to which this Commission is in complete agreement, that the value found by the Court, as of December 31, 1923, was the actual fair value as of that time, arrived at by the consideration of all relevant facts, and that that finding of value is conclusive. That is the base on which the people's case is built. The problem is thereby simplified into bringing down to date that value, plus the value of property acquired since December 31, 1923. To this end, People's Counsel submitted, through the Chief Auditor of the Commission, Charles W. Smith, a number of exhibits showing the results of apply-

ing separately, and in certain combinations, various price trends which Mr. Smith testified the Commission ought to consider in reaching a conclusion as to the present day fair value of the property. Some of the trends, he thought, were indicative of reproduction cost, while others were more indicative of value in general or the relative purchasing power of the dollar. The value found by the Court as of December 31, 1923, and the cost of net additions to fixed capital in subsequent years, were expressed in value as of December 31, 1932, by separate application of each trend.

TREND DEVELOPED BY COMMISSION

The Commission has given careful consideration to all of Mr. Smith's exhibits and his testimony in explanation of the significance of the various index numbers which were used. We are persuaded that each of the price trends submitted does reflect an influence in the determination of the average purchasing power of the dollar as of any particular date, though all such influences are not equally potent.

We believe that fair value of a public utility property such as this, for rate making purposes, should, and does, trend directly with the average purchasing power of the dollar and that a trend or series of index numbers to indicate fair value with a high degree of accuracy can be developed by combining the several trends offered by Mr. Smith in such manner as to give reasonable consideration to the influence that each reflects upon the average purchasing power of the dollar from year to year.

The Commission has attempted to develop such a trend from Mr. Smith's exhibits, including an exhibit based upon Western Electric Company prices which Mr. Smith developed from Company Exhibit No. 47 after disregarding increases of prices subsequent to the year 1929 and the Interstate Commerce Commission trend applying particularly to telephone and telegraph properties.

There are introduced here several tabulations and a graph to facilitate comparison of figures and to illustrate clearly the basic data used and method followed.

First is a comparison of results obtained by application,

separately, of the price trends offered by Mr. Smith to the value found by the Federal Court as of December 31, 1923, and to net additions subsequently made, to produce value as of December 31, 1932.

Second is a tabulation of all the price trends considered by the Commission in developing a fair value trend, with their corresponding translators for translating values of each year into value as of December 31, 1932.

Third is a tabulation showing the derivation of translators for a fair value trend by a weighted combination of the translators of the various price trends.

Fourth is a grouping of certain trends and an expression of the resultant of each grouping and of several other trends in index numbers referred to December 31, 1923, as 100. This tabulation is the basis of the graph which immediately follows it and was prepared merely for convenience in plotting. The Commission considers this graphic comparison of various price trends with a trend which was prepared by the Company, from its own experience, to indicate changes in value of its composite property, and with the fair value trend developed by the Commission, to be a most persuasive indication of the reasonableness of the Commission's finding and of the absolute unreasonableness of the Company's trend subsequent to the year 1929. It is only necessary to glance at this graph to see that all price trends other than that of the Company slope sharply downward, all in substantial agreement with each other and with common knowledge of the changes in purchasing power of the dollar since 1929, while the Company's trend continues on, totally unaffected by world-wide price changes.

COMPARISON OF RESULTS OBTAINED BY APPLICATION OF VARIOUS PRICE TRENDS TO THE VALUE FOUND BY THE FEDERAL COURT AS OF DECEMBER 31, 1923, AND TO NET ADDITIONS TO DECEMBER 31, 1932. (WORKING CAPITAL NOT INCLUDED.)

Exhibit	Identification of Price Trend	Value as of December 31, 1932 — New	Value as of December 31, 1932 — Depreciated
P. C. 20	U. S. Dept. of Labor, All Commodities	$37,310,275	$30,458,180
P. C. 24	National Association of Purchasing Agents—Commodities	31,210,230	25,410,849
P. C. 26	Dr. Irving Fisher's Trend—Commodities	35,159,181	28,681,140
P. C. 27	Dun's Trend—Commodities	41,075,975	33,581,993
P. C. 28	Bradstreet's Trend—Commodities	30,625,344	24,983,624
	Average of Five Commodity Trends	$35,076,201	$28,623,157
P. C. 17	Engineering News-Record—Construction	$42,828,289	$35,009,281
P. C. 19	American Appraisal Co.—Construction	39,922,295	32,623,549
P. C. 15	Richey (Old Series)—Construction	43,764,252	35,783,737
P. C. 71	Consolidated Engineering Co.—Construction	41,740,930	34,092,828
P. C. 77	Turner Construction Co.—Construction	40,627,175	33,153,303
	Average of Five Construction Trends	$41,776,588	$34,132,540
P. C. 23	U. S. Dept. of Labor—Building Materials	$40,586,570	$33,140,626
P. C. 25	National Association of Purchasing Agents—Building Materials	36,701,353	29,965,050
	Average of Two Building Materials Trends	$38,643,962	$31,552,838
P. C. 29	Federal Reserve Bank of New York—General	$44,066,090	$36,056,408
P. C. 32	Chas. W. Smith—Baltimore Wages	37,780,208	30,918,858
P. C. 34	U. S. Dept. of Labor—Building Materials and Baltimore Wages	39,608,579	32,369,324
P. C. 35	I. C. C.—Railroad Telegraph and Telephone Lines	39,163,171	32,024,463
P. C. 36	Co. Exhibit 35, Western Electric Company Prices, less increase since 1929	42,467,471	34,567,634
P. C. 73	Composite Trend by Accounts	38,809,904	31,108,325
	This Commission's Fair Value Trend	$39,928,413	$32,610,327

TABULATION OF PRICE TRENDS SUBMITTED IN EVIDENCE IN THIS CASE.

Exhibit	Identification of Price Trend	Translators, December 31, 1932 = 100									
		1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
P. C. 20	U. S. Dept. of Labor, All Commodities	63.81	63.81	60.48	62.60	65.62	64.74	65.69	72.45	85.75	100.0
24	National Association of Purchasing Agents, Commodities	52.94	51.43	46.67	48.39	53.62	55.26	58.88	68.48	83.44	100.0
26	Dr. Irving Fisher, Commodities	60.39	59.35	55.80	58.52	62.81	59.78	60.96	68.02	81.19	100.0
27	Dun's, Commodities	70.51	70.73	67.73	72.42	71.41	68.88	70.07	76.78	90.20	100.0
28	Bradstreet's, Commodities	51.25	53.51	49.38	52.88	53.88	51.84	54.33	64.08	78.60	100.0
15	Richey, Old Series, Construction	75.30	75.20	76.80	76.50	77.50	76.50	74.50	77.20	87.80	100.0
17	Engineering News-Record, Construction	72.70	73.60	76.70	76.20	76.80	76.60	76.50	78.10	87.40	100.0
19	American Appraisal Co., Construction	67.65	69.00	71.14	70.76	70.79	71.14	70.93	73.23	84.77	100.0
71	Consolidated Engineering Co., Constr.	69.81	69.22	74.56	77.24	78.47	77.77	75.96	80.13	86.55	100.0
77	Turner Construction Co., Construction	69.39	70.10	69.74	69.74	71.58	71.58	73.51	82.42	93.79	100.0
23	U. S. Dept. of Labor, Bldg. Materials	68.30	69.20	69.60	70.80	74.80	75.20	74.20	78.80	89.40	100.0
25	National Association of Purchasing Agents, Building Materials	58.97	61.33	64.49	66.99	70.77	70.77	71.88	85.71	92.00	100.0
29	Federal Reserve Bank of New York	77.11	77.11	75.29	74.85	74.85	72.73	71.51	76.19	85.33	100.0
32	C. W. Smith, Baltimore Wages	86.80	83.55	76.74	73.34	71.96	71.58	70.50	69.03	68.96	100.0
35	I. C. C. Telephone & Telegraph Lines	64.17	67.42	75.00	76.92	74.07	72.29	71.01	76.46	79.47	100.0
36	Company Exhibit 35, less Increase Since 1929 (Western Electric Co. Prices)	66.48	70.48	71.25	78.00	93.24	91.41	100.00	100.00	100.00	100.0
Co. 47	C. & P. Telephone Co. Composite	89.4	89.6	89.1	93.5	96.1	99.4	96.6	100.0	98.1	100.0

NOTE.—Numbers for years 1924 to 1931, inclusive, are averages for those years.

DEVELOPMENT OF A "FAIR VALUE TREND" BY A WEIGHTED COMBINATION OF VARIOUS PRICE TRENDS SUBMITTED IN EVIDENCE BY PEOPLE'S COUNSEL.

Exhibit P. C.	Identification of Price Trend	Wt.	Weighted Translators 1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
20	U. S. Dept. of Labor, All Commodities	4	255.24	255.24	241.92	250.40	262.48	258.96	262.76	230.80	343.00	400.0
24	National Assn. of Purchasing Agents (Commodity)	2	105.88	102.86	93.84	96.18	107.24	110.52	117.76	136.96	166.98	200.0
26	Dr. Irving Fisher	1	60.89	59.85	55.80	58.52	62.31	59.78	60.96	66.02	81.19	100.0
27	Dun's	1	70.51	70.78	67.78	72.42	71.41	68.88	70.07	76.78	90.90	100.0
28	Bradstreet's	1	51.26	53.51	49.88	52.88	53.88	51.84	54.33	64.08	78.60	100.0
17	Engineering News-Record	2	145.40	147.20	153.40	152.40	153.60	153.20	158.00	158.20	174.80	200.0
19	American Appraisal Company	2	135.30	138.00	142.28	141.52	141.58	142.28	141.86	146.46	169.54	200.0
15	Richey—Old Series	2	150.60	150.40	153.60	153.00	155.00	153.00	149.00	154.40	175.60	200.0
71	Consolidated Engineering Co.	2	139.62	138.44	149.12	154.48	156.94	156.54	151.96	160.26	178.10	200.0
77	Turner Construction Company	1.5	104.09	105.15	104.61	104.61	107.37	107.37	110.26	123.68	140.69	150.0
23	U. S. Dept. of Labor, Bldg. Materials	2	136.60	138.40	139.20	141.60	149.60	150.40	148.40	157.60	178.80	200.0
25	Natl. Assn. of Purchasing Agents, Building Materials	1	58.97	61.33	64.49	66.99	70.77	70.77	71.88	85.71	92.00	100.0
29	Federal Reserve Bank of N. Y.	2	154.22	154.22	150.56	149.70	149.70	145.46	148.02	152.38	170.66	200.0
32	Baltimore Wages	1.5	130.20	125.38	115.11	110.01	107.97	107.37	105.75	108.55	106.47	150.0
35	I. C. C. Tel. & Tel. Lines	3	192.51	202.26	225.00	230.76	222.21	216.87	213.06	229.29	288.41	300.0
36	Company Exhibit 35, less increase since 1929	3	199.44	211.44	218.75	234.00	279.72	274.23	300.00	300.00	300.00	300.0
	Totals	31	2,090.22	2,113.86	2,119.31	2,169.47	2,251.78	2,226.47	2,254.04	2,405.12	2,677.64	3,100.0
	Fair Value Translators	....	67.4	68.2	68.4	70.0	72.6	71.8	72.7	77.6	86.4	100.0

NOTE.—These "Fair Value" Translators are based upon December 31, 1932, as 100, and are intended to be, respectively, the percentage which, when applied to the value of the dollar at December 31, 1923, and to the average value for each of the years 1924 to 1931, inclusive, will produce value as of December 31, 1932.

BASIC DATA FOR COMPARISON OF VARIOUS PRICE TRENDS, 1923 TO 1932.

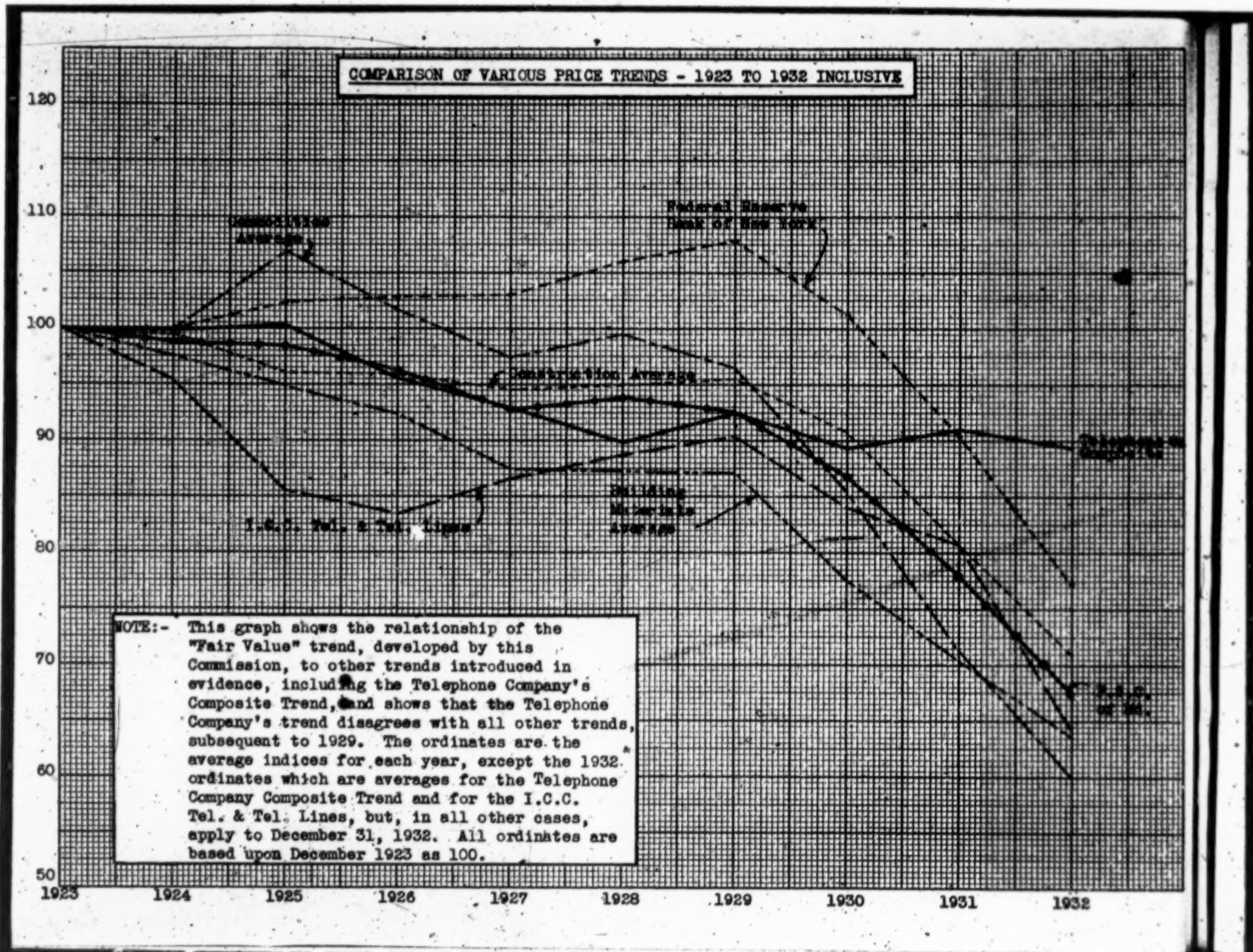
Exhibit	Identification of Trend	Translators, December 31, 1932=100									
		1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
P. C. 20	U. S. Dept. of Labor, All Commodities	63.8	63.8	60.5	62.6	65.6	64.7	65.7	72.5	85.8	100.0
24	Natl. Assn. of Purchasing Agents	52.9	51.4	46.7	48.1	53.6	55.8	58.9	68.5	83.4	100.0
26	Dr. Irving Fisher	60.4	59.4	55.8	58.5	62.3	59.8	61.0	68.0	81.2	100.0
27	Dun's	70.5	70.7	67.7	72.4	71.4	68.9	70.1	76.8	90.9	100.0
28	Bradstreet's	51.2	53.5	49.4	52.9	53.9	51.8	54.3	64.1	78.6	100.0
	Average of Five Commodity Trends	59.8	59.8	56.0	58.9	61.4	60.1	62.0	70.0	84.0	100.0
P. C. 17	Engineering News-Record	72.7	73.6	76.7	76.2	76.8	76.6	76.5	78.1	87.4	100.0
19	American Appraisal Company	67.6	69.0	71.1	70.8	70.8	71.1	70.9	73.2	84.8	100.0
15	Richey (Old Series)	75.3	75.2	76.8	76.5	77.5	76.5	74.5	77.2	87.8	100.0
71	Consolidated Engineering Company	69.8	69.2	74.6	77.2	78.5	77.8	76.0	80.1	86.6	100.0
77	Turner Construction Company	69.4	70.1	69.7	69.7	71.6	71.6	73.5	82.4	93.8	100.0
	Average of Five Construction Trends	71.0	71.4	73.8	74.1	75.0	74.7	74.3	78.2	88.1	100.0
P. C. 23	U. S. Dept. of Labor, Bldg. Materials	68.3	69.2	69.6	70.8	74.8	75.2	74.2	78.8	89.4	100.0
25	National Association of Purchasing Agents, Building Materials	59.0	61.3	64.5	67.0	70.8	70.8	71.9	85.7	92.0	100.0
	Average of Two Bldg. Materials Trends	63.7	65.2	67.1	68.9	72.8	73.0	73.0	82.3	90.7	100.0

NOTE.—Numbers for years 1924 to 1931, inclusive, are averages for those years.

BASIC DATA FOR COMPARISON OF VARIOUS PRICE TRENDS, 1923 TO 1932.—(Continued)

Exhibit	Identification of Trend	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
	Average Commodity Trend:										
	Indices, December 31, 1932=100	167.2	167.2	178.6	169.8	162.9	166.4	161.8	142.9	119.0	100.0
	Indices, December 31, 1923=100	100.0	100.0	106.8	101.6	97.4	99.5	96.5	85.5	71.2	59.8
	Average Construction Trend:										
	Indices, December 31, 1932=100	140.8	140.1	135.5	135.0	133.3	133.0	134.6	127.9	113.5	100.0
	Indices, December 31, 1923=100	100.0	99.5	96.2	95.9	94.7	95.1	95.6	90.8	80.6	71.0
	Average Building Material Trend:										
	Indices, December 31, 1932=100	157.0	153.4	149.0	145.1	137.4	137.0	137.0	121.5	110.3	100.0
	Indices, December 31, 1923=100	100.0	97.7	94.9	92.4	87.5	87.3	87.3	77.4	70.3	63.7
Co. 47	C. & P. Telephone Co. Composite Indices, December 31, 1923=100	100.0	99.8	100.3	95.6	93.0	89.9	92.5	89.4	91.1	89.4
P. C. 35	I. C. C. Tel. & Tel. Lines Indices, December 31, 1923=100	100.0	95.3	85.6	83.4	86.5	88.8	90.4	84.0	80.7	64.2
P. C. 29	Federal Reserve Bank of New York Indices, December 31, 1923=100	100.0	100.0	102.4	102.9	102.9	106.1	107.8	101.2	90.4	77.1
	Commission's Fair Value Trend Indices, December 31, 1923=100	100.0	98.8	98.5	96.3	92.8	93.9	92.7	86.9	78.0	67.4

NOTE.—Numbers for years 1924 to 1931, inclusive, are averages for those years.


COMPARISON OF VARIOUS PRICE TRENDS - 1923 TO 1932 INCLUSIVE
120
110
100
90
80
70
60
50
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932
Federal Reserve Bank of New York
Construction Average
I.C.C. Tel. & Tel. Lines
NOTE:- This graph shows the relationship of the "Fair Value" trend, developed by this Commission, to other trends introduced in evidence, including the Telephone Company's Composite Trend, and shows that the Telephone Company's trend disagrees with all other trends, subsequent to 1929. The ordinates are the average indices for each year, except the 1932 ordinates which are averages for the Telephone Company Composite Trend and for the I.C.C. Tel. & Tel. Lines, but, in all other cases, apply to December 31, 1932. All ordinates are based upon December 1923 as 100.

SHOWING OF REPRODUCTION COST

Counsel for the Company have insisted that Chief Auditor Smith ignores the facts and substitutes a supposititious rate base in 1923; that he should not start with the value found by the Court in 1923, but should arrive at a new value as of that year, depending upon the index which he is applying. Both he and this Commission would be presumptious if we attempted to overrule the Statutory Court and substitute as a starting point a different value for the value which the Court found, after mature deliberation, on a mass of evidence.

The second use of index numbers in this case was to show the value of the property, emphasising the reproduction cost element. In his study in this connection (see People's Counsel Exhibit No. 84, and Record, p. 6261) Mr. Smith went back to June 30, 1914, the date on which the Commission found the cost to reproduce the Telephone Company's property, which reproduction cost was agreed to and accepted by the Company. Mr. Smith took that part of the property which existed on June 30, 1914, and which was still in service on December 31, 1932, and took property additions every year thereafter to the extent that those additions were still in existence on December 31, 1932. He trended those by indices which emphasised the reproduction cost element. These studies were made in order to meet the criticisms of counsel for the Company. No attempt was made, even here, to go behind the finality of the Federal Court's decision.

It is significant that in trending the 1923 rate base, as found by the Court, so as to arrive at fair value, and in trending the 1914 rate base so as to arrive at a value which emphasizes reproduction cost, the results obtained under both methods are substantially the same.

In using index numbers to show the purchasing power of income, Mr. Smith assumed a stable rate base. Starting with the rate base found by the Court in 1923, he added the cost of additions, and made no decrease in values because of the decrease in prices and values coincident with the depression. This rate base was untrended. He did not change the rate base, but showed how the purchasing power of income had increased. He shows, for instance, (People's Counsel Exhibit 53), that

the operating income or return for 1930 of $4,098,874, as shown on People's Counsel Exhibit No. 45, when related to the property of the Company valued by the Court in 1923 and the cost of property added after that time had, in December, 1932, a purchasing power of between $5,000,000 and $6,000,000. This would be the real income and, as heretofore stated, if no change in rates were made, the Company would actually be profiting by the depression from which all others are suffering.

Of all the index numbers in general use the most widely used are those of the All Commodities Index of the United States Bureau of Labor Statistics, which is the official price index of the United States. It has been used in this case by People's Counsel and by the Chief Auditor, first, because it is believed to reflect accurately the change in the general price level and, to a large extent, the change in the value of the dollar and, secondly, because in this particular case it probably represents reproduction cost of the Telephone Company property as well. This index number when applied to the property of the Company shows a decrease, but the decrease is conservative. The Company objects to the use of this index on the ground that the property of the Company includes items not in the index and the index includes items not in the Company's property, that the items in the Company's property do not occur in the same proportion in which they appear in the index, and that the index does not include labor.

These objections were met by Mr. Smith by showing that (1) Such items in the Company's plant as can be identified were substantially lower in value in December, 1932, than the composite of the All Commodities Index. That index measures the decline in the general price level, and regardless of any theories or "judgment" figures as to reproduction cost, it is unquestionably true that the *value* of the Company's property has declined with the general decline in prices, or, in other words, with the increase in the purchasing power of the dollar. If, as the facts show, the experience of the Western Electric Company in purchasing the material it used in its manufacturing processes in 1932 conformed to the All Commodities Index, then the Telephone Company's experience must have been similar. (2) The dominant commodities used in the

pany's plant, weighted in accordance with the relative amounts of each that are used, produce a lower index number than does the All Commodities Index. (3) People's Counsel Exhibit No. 31, which is a study of labor wage rates in Baltimore and vicinity, shows a decline which would, if linked with the All Commodities Index, give substantially the same value as shown by the All Commodities Index alone.

COMMISSION STANDS ON COURT'S FINDINGS.

To the Company's criticism of the trending of value by the Court, to the effect that the index number should have been applied to original cost or to reproduction cost as of a given date, it is sufficient to say that in the opinion of this Commission the Court made no error. The value found, as of December 31, 1923, was a definite finding after long and tedious study by a Court, fully acquainted with the use and meaning of figures, and while it did not agree with the findings of this Commission, the Commission, recognizing not only the authority but the great capacity of the Court, bowed willingly to its judgment. It seems to the Commission that it is more accurate to trend value as of a recent date by the use of the All Commodities Index than it is to trend original cost or estimate of reproduction cost as of a more distant date, for many reasons. For instance, the more recently compiled, the more comprehensive and, therefore, more correct the index numbers are likely to be, while the further back we go the more we are compelled to use restrospectively compiled index numbers, which naturally contain a higher degree of error.

The general or commodity index numbers used by People's Counsel, and testified to by Chief Auditor Smith, were those of the United States Bureau of Labor Statistics, the National Association of Purchasing Agents, Dr. Irving Fisher's, Dun's, Bradstreet's, the Federal Reserve Bank of New York, McGill's, the Analyst's and that of the National Fertiliser Association. That of the United States Bureau of Labor statistics is the most authoritative, and the others were used as cumulative and corroborative in support of the Bureau's figures. A special application of the Bureau's All Commodities Index is made in People's Counsel Exhibit No. 14. The starting point is the

rate base found by the Court in 1923, which is trended, and then subsequent increases in assets are trended. Working capital is allowed in the one computation. The method is precisely that used by the Court. It may be noted that the value found and allowed by the Court was an increase over net cost by 38.87 per cent., whereas the value shown by Exhibit No. 14 reduces net cost but 20.93 per cent. The Court increased net cost by $8,259,856, whereas Exhibit No. 14, dealing with a much larger property, reduces net cost but $8,823,496. It might seem pertinent to observe that if there was sufficient cause for increasing values in 1923 over cost, when prices were high, there is equally as great reason for decreasing value below cost more moderately than they were increased when substantially all prices are low.

WESTERN ELECTRIC PRICES

Mr. J. Kenneth Crosland filed Western Electric indices for the Company. These showed that while prices were collapsing in all other directions the Western Electric had increased its prices to the Bell Companies, including The Chesapeake and Potomac Telephone Company of Baltimore City, 19 per cent. in 1930, and had made slighter increases in 1931 and 1932, until prices in December, 1932, were 11.59 per cent. higher than they had been in 1929 (Company Exhibit 35). These increases were in the face of the fact, also testified to by Mr. Crosland, that the costs of materials to Western Electric in 1932 were 34 per cent. lower than they had been in 1929 and that early in 1933 Western Electric had made a 10 per cent. cut in the wages of its employes. These Western Electric prices for December, 1932, were used by the local Company in finding a reproduction cost of its property. Upon such a basis there could be but one result. It is significant that by disallowing the effect of this substantially 12 per cent. unnatural increase, and making an actual decrease of only 8 per cent., the value of the Company's property would be decreased 20 per cent. and that this reduction applied to the appraisal value found by Mr. Smith, by using Western Electric prices, less working capital, would give a new value of $21,300,000, or approximately what the

studies of Mr. Smith indicate the depreciated value of the property to be.

By declining to recognize the Western Electric Company's increase in prices after 1929, but keeping its prices on the 1929 high level, Mr. Smith in his Exhibit No. 36 discloses a value of the local Telephone Company's property of $34,367,634, which may be compared with the value shown by the United States Department of Labor Building Materials Index of $33,140,626, and the Department's All Commodities Index of $30,458,180.

In endeavoring to test the reasonableness of the Company's criticisms of the indices used by People's Counsel, particularly with respect to determination of reproduction cost, and to get an idea of the influence of Western Electric Company prices upon the Company's appraisal, the Commission has observed that items of real estate which were appraised by Messrs. Frainie, Cummins and Chew in 1923 and again, in similar manner, in 1932, show a trend of value almost identical with that of the All Commodities Index of the United States Bureau of Labor Statistics. A good example is that of the Liberty Forest Central Office Building and Store House which were valued at $178,248 in 1923 and at $167,243 in 1932 (both exclusive of architect's fee). A comparison of these values shows a decline of 38.7 per cent., whereas the All Commodities Index shows 36.3 per cent. decline and the Commission's Fair Value Index shows 32.6 per cent. decline. A higher value, as of December 31, 1932, than was found by Messrs. Frainie, Cummins and Chew, would have been obtained by use of the All Commodities Index or the Commission's Index.

The index of the Interstate Commerce Commission's Bureau of Valuation for telephone and telegraph properties was one of the most illuminating of all those submitted in evidence in this case. When applied to the property of the Telephone Company it indicates a net value of $32,023,483 (People's Counsel Exhibit No. 35). The use of this index is criticised because, it is alleged, it does not include central office equipment. A letter from C. H. Spencer, Supervising Engineer of the Interstate Commerce Commission's Bureau of Valuation, was put in evidence, and this letter states that "telephone equipment" as used

in the index includes "telephones, selectors and other interior office equipment." Moreover, the use of the Interstate Commerce Commission Index to arrive at the value of the property of the Company, as of 1923, indicated a value of $36,454,-295, when the Company's own index indicated a value of $38,-106,484, a variation of less than 1 per cent. When the Interstate Commerce Commission Index was applied back to the 1914 rate base, a present day value of $31,752,183 was obtained. In general, it agrees with the Company's own trends when prices were going up but disagrees when prices came down. It shows a downward drop since 1929, while the Company's trends continue on a high price level. In fact, it agrees generally with all the indices offered in evidence in this case with the single exception of the Company's own index. It is hard for the Commission to believe that the Company's index alone is correct, and that all the others are incorrect and produce misleading results when applied to the Company's property.

DEPRECIATION

Two important determinations to be made in this case are, first, the amount of the accrued depreciation in the property and, second, the annual rate at which depreciation is now accruing. Company witnesses testified that the property is in 86.82 per cent. condition, and the Company holds that the deduction from reproduction cost new should not exceed 13.18 per cent. The amount of depreciation claimed by the Company to be existing in its plant was determined solely by the observation of its experts, and it is insisted that it can be properly and legally determined only by an inspection of the property. A series of decisions by the courts is cited in support of this theory. We do not read them so. We hold that the courts have laid down no fixed and unalterable rule for determining depreciation, any more than they have for finding rate of return, going value, or even total fair value itself, but that, as they have repeatedly held, each case must be determined by the facts of that particular case.

Moreover, this case differs very radically from those on which the courts have made findings as to depreciation. A brief outline of the facts will show this to be so.

On December 1, 1913, this Commission instituted an investigation of the affairs of the Telephone Company for the purpose of determining whether the service and the rates then being charged by it, were reasonable, proper and adequate. This was Case No. 690. After an investigation extending over nearly two and a half years, which investigation included a complete valuation of the Company's property, the Commission issued its findings, which Counsel for the Company in the present case referred to in the most complimentary terms. In that case, as in this, the extent of depreciation actually existing in the property was important to be determined. Then, as now, the subject involved, first, the amount of accrued depreciation actually existing, which must be deducted from the undepreciated base in order to establish the fair value on which the Company is entitled to earn a fair return; and, second, the proper allowance to be made for currently accruing depreciation which is an item of operating expense.

In Case No. 690 it was found that the amount then being set aside for accrued and currently accruing depreciation was insufficient. Company witnesses maintained, and the Commission found, that a reserve of approximately 20 per cent. was necessary to provide for depreciation then accrued, and the Commission ordered that the depreciation reserve be built up and maintained at that figure for the purpose of "placing this Company's affairs on a sound and just basis." The depreciation reserve amounted to $1,367,700 as of June 30, 1914, which was considerably less than the 20 per cent. of the fair value of the property which the Commission held to be a proper amount to be in the reserve. In its finding on this issue, the Commission, after declaring that "an ample reserve for depreciation is an absolute necessity in the case of every public utility, whether new or old," and that if mistakes have been made in the past by failure to set up proper depreciation reserves, the sooner such mistakes are corrected the better it will be for all concerned, because "the reserve created in the future covers not only the depreciation which accrues in the future, but as well the past depreciation which will not become wholly manifest until some time in the more or less distant future," went on to say this:

"The company's witnesses in this case contended that it should be permitted to create in the immediate future and thereafter maintain depreciation reserves normally equal to from 20 to 25 per cent. of its plant investment. We have carefully considered this contention both from the point of view of the company's probable requirements in the future, and its actual experience in the past. Our conclusion is that the public should be required to create depreciation reserves not normally exceeding 20 per cent. of the plant investment as the same appears from time to time. After this reserve has been created, and the property in its entirety comes to be valued, it will be found that four-fifths of the same belongs to the stockholders and that one-fifth has been contributed by the public. *This advance will have been made by the public as its guarantee that, so far as it is concerned the company will at all times be in a position to make replacements of its property when and as they are required for efficient service. And the reserve of 20 per cent. being created, and invested in additions to plant, the company would be entitled to earn upon 80 per cent. of the total investment.*" (Italics ours.)

One of the Company's witnesses contended in that case that the size of the reserve was a question that ought properly to be determined by the Company's officers. The Commission expressed sympathy with this view, and found that:

"the public shall not be required to create a reserve of over 20 per cent. If the executives of this company feel that a larger reserve is required for the proper administration of its affairs, they will be at liberty to create the same either out of surplus or out of money derived from outside sources, as they may elect."

POSITION OF THE COURTS

The findings of the Commission in this matter in Case No. 620 were accepted by the Company, which acted upon them and built up its depreciation reserve out of the contributions of the public for that specific purpose. The Commission holds that this acceptance and action constitutes, and since 1918 has constituted, an agreement between the public and the Company for the protection of the rights and interests of both, and which was never questioned by the Company until the 1924 case. In that case the Commission's position was upheld by the

Statutory Court, C. & P. Tel. Co. vs. Whitman, et al, 3 F. (2d) 938, when it was called on to pass upon the issue.

The Court had this to say upon the matter:

"On December 31, 1923, the total to the credit of depreciation reserve was only about 19 per cent. of what we have found to be the cost of reproducing new the Company's tangible property. The evidence offered by the Company has failed to convince us that its plant as it stands today is worth more than it would cost new, less the amount now to the credit of the depreciation account.

"In 1916 the Commission, apparently with the full approval of the Company, allowed it, as the exigencies of its business permitted, to accumulate a depreciation reserve not to exceed 20 per cent. of its capital, and expressly stipulated that such depreciation reserve so set apart should not be included in the capital upon which the Company was entitled to earn a return from rates. We do not hold that there was any agreement between the Commission and the Company in any sense which could be enforced by a court of equity, or that what was done amounted to an estoppel in pais; but we do hold that it is evidence of what both the Commission and the Company felt then was the amount of depreciation reserve which the Company should accumulate if it was to be kept in such a financial condition as would be safe both to its stockholders and to its patrons. We think that that concurrence of view is strong and weighty evidence that a depreciation not in excess of 20 per cent. is not more than may be fairly held to be the average actual depreciation of the plant. As already stated, there is in our view nothing in this record to prove that there was any error in the estimate then agreed upon."

Counsel for the Company contend that the position of this Commission in this matter is improper, notwithstanding its approval by the Court. The action of the Court in that case, counsel assert, was an error of law, and Judge Rose's opinion is not even a precedent, so far as this question is concerned, and never could be so considered. To support their contention they cite the cases of the *Board of Public Utility Commissioners, et al, vs. New York Telephone Company* (1926), 271 U. S. 23, and *United Railways and Electric Company vs. West, et al*, (1930), 280 U. S. 234. In neither case, does it seem to the

Commission, is counsel's contention sustained. The situation here is not comparable in any way to the situations involved in those cases.

In the *New Jersey* case, 271 U. S. 23, the New York Telephone Company, which owned the system in New Jersey, filed on March 6, 1924, a new schedule providing for increased rates in New Jersey. The Board of Utility Commissioners suspended those rates pending an investigation as to their reasonableness, and on December 31, 1924, disallowed the increase and required the company to continue to serve at the existing rates, notwithstanding it had found that the net earnings on the property in New Jersey would yield less than a fair return by at least $1,300,000. The Board also found that the company had been setting aside *too large* an amount for depreciation; that the reserve amounted to $16,902,520, which was invested in plant. For 1925 the Board of Commissioners, after declaring that the credit balance in the depreciation reserve was more than required for the maintenance of the property, directed that $4,750,000 of that amount be used by the company to make up deficits in any year when earnings might be less than a reasonable return found by the Board. The effect of its order was to require that, if net revenues provided less than a reasonable return in 1925 or subsequent years, there should be deducted from the expense of depreciation in that year and added to the net earnings a sum sufficient to make up the deficiency. It was this sort of thing which the Supreme Court, speaking through Mr. Justice Butler, said could not be done, and that the "property or money of the company represented by the credit balance in the reserve for depreciation cannot be used to make up the deficiency" in fair rate of return which the rates charged failed to yield.

This situation is totally different from that now before this Commission. There is no claim that the rates which have been charged since 1924, under this arrangement, have failed to yield a fair return on the fair value of the Company's property as determined by the Court. No effort is hereby made to make up any deficiency in the rate of return by using part of the depreciation reserve or any other of the moneys of the Company for that purpose. The only thing which the Commis-

sion has to do is adhere to the agreement made with the Company in 1916, under which the depreciation reserve was built up to its present percentage as measuring the amount of actual depreciation which would be found to exist in the property under normal conditions, and which agreement was sustained by Judge Rose and his colleagues on the Statutory Court in 1925.

Counsel quote the Supreme Court in the case of *United Railways and Electric Company* vs. *West*, et al, supra, as saying:

> "* * * the fundamental principle to be observed is that the property of a public utility, although devoted to the public service and impressed with the public interest, is still private property; and neither the corpus of that property nor the use thereof constitutionally can be taken for a compulsory price which falls below the measure of just compensation. One is confiscation no less than the other."

Certainly that is a principle which this Commission recognizes and to which it adheres, but we cannot see that this finding of the court has the slightest bearing on the particular issue before us. True, the Company claims the amount in the depreciation reserve to be its own. The Statutory Court and this Commission hold it to be the property of the Company's customers, held in trust by the Company to meet a certain, definite situation in *this* Company's affairs which has arisen in the past and is expected to continue in the future. No court of authority superior to that which sat in the 1924 case has passed on this matter or one akin to it, and until such a court does, this Commission will adhere to its position.

Moreover, if the Company really believes the amount in the depreciation reserve is in excess of the actual depreciation existing in the Company's property—depreciation that may be unseen as well as that which can be seen—and this depreciation amounts to no more than 13.18 per cent., then it would seem, if the Company is correct, that it has been collecting from the people more than it had any right to collect under the agreement which was intended to be fair to the public as well as to the Company, and that the proper thing to do would be to cut down the amount allowed for depreciation until it

will indicate a depreciation to the extent of not more than 18.18 per cent. of the fair value of the Company's property. The conclusion is inescapable that if the depreciation, seen and unseen, of the Company's property does not equal the amount set aside, ... take care of it, then the Company has been taking from its customers more than that to which it is rightfully entitled.

ALL DEPRECIATION NOT VISIBLE

The Commission in its opinion in Case No. 1915, which was an investigation of the rates, charges, service, property and affairs of the Consolidated Gas Electric Light and Power Company of Baltimore, decided June, 1923, had this to say with reference to the company's contention that no depreciation existed in its property because it had been maintained in 100 per cent. condition:

> "Despite the opinions of the witnesses for the company, we still hold as true that all matter crumbles and decays, and that machinery and methods grow obsolete and useless, and we are therefore skeptical of a mind-woven theory that is contrary to universal experience and the accepted belief of mankind, and which in the present case would negative what perception clearly discloses. Particularly are we loath to listen to this hypothesis, as the company has heretofore advanced and accepted the benefits of a contrary assumption. We find that depreciation exists and accrues."

The Commission is of the same view today. It still holds as true "that all matter crumbles and decays and that machinery and methods grow obsolete and useless," and that much of this cannot be observed without tearing parts of the plant to pieces. It was for the purpose of providing against such crumbling and decay, such obsolescence and uselessness, much of which was not visible, that the Telephone Company was permitted to build up a depreciation reserve amounting to 30 per cent. of the value of its physical property. That was the provision made by the public against indifferent or inadequate service due to the use of equipment which had outlived its efficient service life, and also the public's guarantee that

the cost or the value of the property of the Company used up in the public service shall be returned to it, as the law of the land provides."

That this view of the Commission, instead of being negatived, is sustained by the highest court in the land is shown by the pronouncement of Mr. Justice Moody, speaking for the court in the *Knoxville Water* case, 212 U. S. 1. Here are his words:

"The items composing the plant depreciate in value from year to year in a varying degree. Some pieces of property, like real estate for instance, depreciate not at all, and sometimes, on the other hand, appreciate in value. But the reservoirs, the mains, the service pipes, structures upon real estate, standpipes, pumps, boilers, meters, tools and appliances of every kind *begin to depreciate with more or less rapidity from the moment of their first use. It is not easy to fix at any given time the amount of depreciation of a plant whose component parts are of different ages, with different expectations of life.*" (Italics ours.)

And again:

"A water plant, with all its additions, begins to depreciate in value from the moment of its use. Before coming to the question of profit at all the company is entitled to earn a sufficient sum annually to provide not only for current repairs, but for making good the depreciation and replacing the parts of the property *when they come to the end of their life.* The company is not bound to see its property gradually waste, without making provision out of earnings for its replacement. It is entitled to see that from earnings the value of the property invested is kept unimpaired, so that, at the end of any given term of years, the original investment remains as it was at the beginning. It is not only the right of the company to make such a provision, but it is its duty to its bond and stockholders, and, in the case of a public service corporation, at least, its plain duty to the public." (Italics ours.)

And that is all this Commission has done in setting up a 20 per cent. depreciation reserve. It has set up a fund, not for the purpose of giving the Company something extra that it did not care to give in rates, but for "making good the depreciation and replacing the parts of the property when they come to the end of their life"; to the end that the Company may not "see its property gradually waste, without making provision

out of earnings for its replacement"; that the value of the property may be kept unimpaired, "so that, at the end of any given term of years, the original investment remains as it was at the beginning." Only this and nothing more.

At the risk of extending this discussion unduly, the Commission feels justified in quoting at some length the opinion of Judge Manton, speaking for the Statutory Court in the case of *New York Telephone Company* vs. *Prendergast*, 36 F. (2d) 54, in which case the Court held that the amount in the depreciation reserve was the best evidence of the amount of actual depreciation which had then accrued. The Court said:

> "Either the property has in fact depreciated to the extent of the depreciation reserve which has been created, or it has not. If it has not, the plaintiff has been allowed to take money from its ratepayers under the claim of depreciation which was not there, either seen or unseen, and which it will never have to admit. In that case, the excess reserve has been acquired lawfully and is the property of the plaintiff. But if the actual depreciation exists to the extent that the plaintiff has claimed in building up this reserve, it exists as much for valuation purposes as it did for the creation of the surplus. Whether or not the plaintiff admits the depreciation now, or must do so in the future, is unimportant, *for it is there, and the time of its admission is immaterial on the question of its existence.* If, as claimed by the plaintiff, sound honest business methods have been followed and the straight line method pursued by it was not excessive, the depreciation reserve, when added to the property now or at any time, would be no more than sufficient to keep the actual value of the property constant. The record satisfactorily shows that there is more reason to believe that the actual existing depreciation in the plaintiff's property is reflected by the amount of its reserve for depreciation than that it is shown by the estimate of experts who stated observed depreciation, which sum only was deducted by the master. For these reasons, the plaintiff has failed in the burden resting upon it to prove that the reserve depreciation was greater than the actual depreciation, both seen and unseen, as measured by the depreciation reserve.
>
> When it built up its reserve, it claimed the reserve as its actual depreciation. It cannot now take an inconsistent position about depreciation, without fully establishing it, and it has weakened its proof of present value at-

cordingly. The plaintiff was right about depreciation when it created its reserve, and it is wrong, in its position now, in its claim for a lesser sum as actual depreciation in this effort to establish fair value." (Italics ours.)

In view of all this, the Commission sees no reason for changing its position in this matter, a position it has adhered to for seventeen years, and has taken the amount in the depreciation reserve, when trended, as the correct measure of accrued depreciation. This amounts to approximately 20 per cent. of the value of the physical property. It must also be remembered that the Company's figure for observed depreciation of 12.15 per cent. was not the result of a complete inspection, which was not practicable, but of an inspection of buildings by Messrs. Cummins, Frainie and Chew, and an inspection of about 10 per cent. of the other depreciable property by Mr. W. F. Sloan. In this situation the Commission believes the depreciation reserve, when all the circumstances surrounding it are taken into consideration, is a much better measure of depreciation, visible and invisible, actually existing in the property, than the Company's estimate, which, at most, included only what the eye could detect, and, with respect to all property other than buildings, was based on observation of a very small proportion of the property.

In determining the value of the Company's property in use, as of December 31, 1932, the Commission has trended the depreciation reserve as shown in the following tabulation:

APPLICATION OF COMMISSION'S FAIR VALUE TREND

	Value found by Court, as of Dec. 31, 1929	Trended to Dec. 31, 1932	Value
Value found by Court, as of Dec. 31, 1929	$[illegible]		
Less Working Capital	[illegible]		
Amount to be trended from Dec. 31, 1929	[illegible]	[illegible]	[illegible]
Net Additions, 1930	[illegible]	[illegible]	[illegible]
1931	[illegible]	[illegible]	[illegible]
1932	[illegible]	[illegible]	[illegible]
1933	[illegible]	[illegible]	[illegible]
1934	[illegible]	[illegible]	[illegible]
1935	[illegible]	[illegible]	[illegible]
1936	[illegible]	[illegible]	[illegible]
1937	[illegible]	[illegible]	[illegible]
1938	[illegible]	[illegible]	[illegible]
1939	[illegible]	[illegible]	[illegible]
1940	[illegible]	[illegible]	[illegible]
1941	[illegible]	[illegible]	[illegible]
1942	[illegible]	[illegible]	[illegible]
Totals	[illegible]		[illegible]

Depreciation Reserve			
Court's Value—Dec. 31, 1922	$ 4,614,943	87.4	$ 4,436,485
Net Additions, 1924	(2,556)	68.2	(2,425)
1925	30,430	68.4	137,003
1926	547,230	70.0	383,135
1927	804,711	72.6	584,220
1928	658,770	71.8	472,997
1929	823,616	72.7	598,914
1930	196,846	77.6	144,992
1931	229,100	86.4	197,942
1932	342,733	100.0	342,733
Totals	$10,405,147		$ 7,318,086
Depreciated Value of Property, as of December 31, 1932			$32,610,327
Add Working Capital			737,000
			$33,347,327
Deduct Pleasant Street Property			137,496
			$33,209,831
Rate Base			$33,210,000

( ) Indicates Subtraction.

CURRENTLY ACCRUING DEPRECIATION

With respect to currently accruing depreciation, People's Counsel contended that the steady and uninterrupted expansion of the Company's business in the past had made "inadequacy" the controlling factor in determining the service life of most of the elements of the property and that service life, so limited by inadequacy, would of course be shorter than the service life of similar property employed in a stationary or shrinking business, which property would be retired only when physical deterioration or ordinary obsolescence required. It was argued that, because the business of this Company has now ceased to expand and has experienced a substantial shrinkage in recent months, it is reasonable to assume that in the immediate future, and for a period of several years, the present plant will be more than adequate and service life of plant will be terminated solely by physical depreciation or ordinary obsolescence and will, therefore, with respect to those units of plant heretofore retired because of inadequacy, be materially lengthened.

It necessarily follows that if the service life of plant be lengthened, the amount which must be set aside annually, out

of revenue, to provide for retirements is correspondingly reduced.

If, in the past, inadequacy had been a determining factor in the retirements of all classes of property and had required for each class a substantially higher annual allowance for retirements than would have been necessary to account for physical depreciation and obsolescence, then it might have been reasonable, until such time as lost business had been recovered and growth was resumed, to suspend accruals to the reserve until it was adjusted to the changed conditions.

The Company points out that it is required by the Interstate Commerce Commission to base depreciation accruals upon "the straight line theory" which contemplates uniform annual accruals which will aggregate the amount of the original cost of the item at the time of retirement. This Commission approves of the straight line method of accounting for depreciation, but understands that the line remains straight only so long as original assumptions prevail, and that every change in the estimate of service life must produce a variation from the straight line previously determined for the class of property affected. The closest adherence to the straight line method requires adjustments to accrual rates whenever conditions change, and when a change occurs of such magnitude and far reaching effect as the present business depression, it is bound to have a very noticeable effect upon the proper rate of accruals for retirements in what has been, heretofore, a steadily expanding property.

DETERMINATION OF ANNUAL PERCENTAGE RATES OF DEPRECIATION ACCRUALS

The Commission has made a study and a comparison of the claims and supporting testimony of the Company with the estimates made by Messrs. Pegon and Holland for People's Counsel, and has also referred to the Company's actual experience during the past nine years as a test of reasonableness. It has found for each class of property what it believes to be a reasonable percentage rate of annual accrual, in the light of all conditions which must be considered.

The Company claimed a composite rate of 2.3 for Rights of

Way. People's Counsel submitted no estimate of this item, but the Company's experience showed a rate of 1.4 and as there was no apparent reason for a substantial change in rate in the future, the Commission has allowed 1.5.

With respect to Buildings and Central Office Equipment, the Commission's allowances are substantially less than claimed by the Company though much more than estimated by People's Counsel and much more than the Company's actual experience shows. When reasonable consideration is given to the change in business conditions, and consequent lengthening of service life in these elements of property, the rates of 2.0 for buildings and 3.0 for central office equipment are believed to be ample.

The allowance of 6.0 for Private Branch Exchanges is comparable with the Company's claim of 8.2 and a showing of 4.81 as the Company's actual experience. Certainly, the allowance of 6.0 seems ample when compared with the Company's past experience.

The Company claimed a rate of 5.8 for Pole Lines and the Commission's Chief Engineer, Mr. Holland, testifying for People's Counsel, estimated that 5.5 would be reasonable. The Company's experience seems to indicate a rate of 8.55, but there is much in the record to the effect that the average service life of poles has been greatly increased by preservative treatment and by substitution of cable for wires in locations where lines have been most affected by storms. The Commission has concluded that the Company's claim of 5.8 for this item is reasonable, and has allowed it.

The Company claimed a composite rate of 3.3 for Cable, both aerial and underground, while Mr. Pagon's estimates would approximate a composite of 1.5, and 2.0 was Mr. Holland's estimate. The Company's experience shows 4.43 for aerial cable and 2.53 for underground cable. The effect of the change in business conditions upon the service life of this class of property has been weighed with the Company's experience and other evidence and the Commission has allowed 3.0 for aerial cable and 2.5 for underground cable as being ample for these items.

With respect to Aerial Wire, the Company's claim is 7.0,

which includes 1.5 for temporary facilities. Mr. Pagon estimated 5.48 on the same basis and the Company's experience showed 10.41. The item of temporary facilities represents the cost of providing temporary service through insulated wires strung along fences or upon the ground after a storm has wrecked a line, pending permanent reconstruction of the line. The present policy of the Company is to replace wires with cable in exposed locations, for the express purpose of preventing storm damage, and the general use of treated poles of much longer life than those previously used should provide additional resistance to storms. The Commission believes its allowance of 6.5 for this item will prove ample.

The Company claimed a rate of 2.0 for Underground Conduit. Mr. Pagon's estimates would approximate a composite of 0.8 and Mr. Holland estimated 1.0. The Company's experience showed 0.57. There was testimony by Mr. Sloan as to conditions which he had observed, indicating that a higher rate of depreciation may be experienced in the future than in the past and the Commission has determined that a rate of 1.5 is reasonable for this class of property.

The preceding discussion has referred to all the principal elements of property.

The following tabulation shows, in convenient form for comparison, the several estimates herein mentioned and the Company's experience:

DETERMINATION OF ANNUAL PERCENTAGE RATES OF DEPRECIATION ACCRUALS

Account	Class of Property	Co. Exhibit 13			P. C. Exhibit 66					
		Service Life Years	Salvage Per Cent.	Annual Rate	Service Life Years	Salvage Per Cent.	Annual Rate	Company's Experience	P.C. Exhibit No. 60	Commission's Allowance
207	Rights of Way—Exchange	40	0	2.5	....	....	0.0	....	....	....
	Rights of Way—Toll	50	0	2.0	....	....	0.0	....	....	....
	Composite Rate	....	....	2.3	....	....	0.0	1.4	....	1.5
212	Bldgs.—Manual Exch. and Other	27	15	*3.1	....	....	....	....	....	....
	Bldgs.—Dial Exchange	45	10	2.0	....	....	....	....	....	....
	Bldgs.—Composite Rate	....	....	2.8	100	33	0.67	0.74	1.5	2.0
221	Cen. Off. Equipment—Manual	17	4	5.6	50	4	1.92	....	2.5	....
	Cen. Off. Equipment—Dial	22	0	4.5	50	0	2.00	....	2.0	....
	Cen. Off. Equip.—Composite Rate	....	....	5.3	....	....	....	2.34	....	3.0
222	Cen. Off. Other Equipment	....	....	6.7	....	....	5.33	....	4.0	6.0
231	Station Apparatus	5	65	7.0	7	65	5.0	....	5.0	5.0
234	P. B. X.—Multiple	12	10	7.5	12	10	7.5	....	....	....
	P. B. X.—Non-Multiple	7	40	8.6	9	50	5.56	....	....	....
	P. B. X.—Composite Rate	....	....	8.2	....	....	....	4.81	2.5	6.0
235	Booths and Special Fittings	8	60	5.0	10	60	4.0	....	5.0	5.0
241	Pole Lines—Exchange	18	-10	6.1	25	-10	4.4	....	5.5	....
251	Pole Lines—Toll	22	- 8	4.9	30	- 5	3.5	....	5.5	....
	Pole Lines—Composite Rate	....	....	5.8	....	....	....	8.55	....	5.8
242	Cable—Exchange Aerial	22	8	4.2	50	15	1.7	4.43	2.0	3.0
252	Cable—Toll Aerial	30	15	2.8	75	25	1.0	....	2.0	2.5
245	Cable—Exch. Underground Main	35	15	2.4	....	....	1.4	....	2.0	2.5
	Cable—Exch. Underground Subsid.	20	- 3	5.1	....	....	....	2.53	2.0	2.5
255	Cable—Toll Underground	35	15	2.4	83	0	1.2	....	2.0	2.5
246,256	Cable—Submarine	20	0	5.0	25	0	4.0	....	4.0	4.0
	Cable—Composite Rate	....	....	3.5	....	....	....	....	....	....
243	Aerial Wire—Exchange	16	-10	*8.4	....	....	....	....	....	....
253	Aerial Wire—Toll	22	20	*5.1	....	....	....	....	....	....
	Aerial Wire—Composite Rate	....	....	*7.0	....	....	*5.46	*10.41	3.13	*6.5
244	Undergd. Condt.—Exchange	50	0	2.0	115	0	0.87	0.57	1.0	....
254	Undergd. Condt.—Toll	60	0	1.7	150	0	0.67		1.0	
	Undergd. Condt.—Composite Rate	....	....	2.0	....	....	....	....	....	1.5
261	Furniture and Office Equipment	12	20	6.7	15	25	5.0	4.71	8.0	6.7
264	Gen. Stable and Garage Equip.	....	....	19.0	....	....	18.0	22.48	15.0	19.0

* Includes 1.5 per cent. for temporary facilities.

These rates, when applied separately to the book cost of that property for which each was determined, produce an aggregate amount, for the year 1932, of $1,719,594. This equates to 3.57 per cent. of the book cost of depreciable property and to 3.45 per cent. of the total book cost of fixed capital.

The Commission has applied this rate of 3.45 per cent. to the undepreciated value it has found for the property, as of December 31, 1932, exclusive of Going Value and Working Capital, and has determined that the proper allowance in operating expenses for depreciation accrual in 1933 is $1,352,284.

The following tabulation shows the application of the rates determined for the several classes of property:

COMPUTATION OF DEPRECIATION EXPENSE FOR 1932 BY APPLICATION OF RATES ALLOWED BY COMMISSION

		Book Cost Dec. 31, 1932	Depreciation Rates Per cent.	Depreciation Expense
207	Right of Way	$ 934,220.00	1.5	$ 14,013.30
212	Buildings	2,881,044.54	2.0	57,632.89
221	C. O. Telephone Equipment—Manual	7,904,306.84	3.0	239,529.21
221	C. O. Telephone Equipment—Dial	3,547,729.89	3.0	106,431.90
222	Other Equipment of Central Offices	363,401.20	6.0	21,804.07
231	Station Apparatus	3,832,359.28	5.0	191,642.96
234	Private Branch Exchgs.—Non-Multiple	1,095,235.68	6.0	65,714.14
234	Private Branch Exchanges—Multiple	490,071.00	6.0	29,404.26
235	Booths and Special Fittings	602,747.98	5.0	30,137.40
241	Exchange Pole Lines	3,785,816.31	5.8	219,577.35
242	Exchange Aerial Cable	4,577,472.30	3.0	137,324.17
243	Exchange Aerial Wire—Line—Iron	906,210.00	6.5	62,903.65
243	Exchange Aerial Wire—Line—Copper	241,914.00	6.5	15,724.41
244	Exchange Underground Conduits	3,852,902.38	1.5	57,793.54
245	Exchange Underground Cable	6,209,515.07	2.5	155,237.88
246	Exchange Submarine Cable	19,229.37	4.0	769.17
251	Toll Pole Lines	1,601,269.67	5.8	92,873.64
252	Toll Aerial Cable	924,484.34	2.5	23,112.11
253	Toll Aerial Wire—Line—Iron	8,248.00	6.5	536.12
253	Toll Aerial Wire—Line—Copper	867,715.39	6.5	56,401.50
254	Toll Underground Conduits	149,862.46	1.5	2,247.94
255	Toll Underground Cable	868,000.65	2.5	21,702.37
256	Toll Submarine Cable	58,149.06	4.0	2,325.96
261	Office Furniture and Fixtures	332,974.90	6.7	22,309.32
262	General Shop Equipment	1,765.00	10.0	176.50
263	General Store Equipment	29,856.32	9.0	2,687.07
264	General Stable and Garage Equipment	299,666.36	19.0	56,936.61
265	General Tools and Implements	126,810.33	16.0	20,289.65
268	Interest during Construction	337,636.69	3.6	12,154.92
	Total	$47,001,805.01		$1,719,566.91
201	Organization	$ 6,999.55		
204	Other Intangible Capital	26,661.76		
232	Station Installation	1,049,960.16		
233	Interior Block Wire	82,986.25		
243	Exchange Aerial Wire Drop	1,169,786.34		
211	Land (less $204,000 for Pleasant Street Property)	457,422.62		
	Total	$49,796,582.69		

NOTE.—Composite rate equates to 3.57 per cent. of depreciables and 3.45 per cent. of total fixed capital.

DEPRECIATION BASED ON VALUE, NOT COST

The allowances for depreciation made by the Commission in this case are based on the present-day value of the property in accordance with the rulings of the Maryland Court of Appeals in the case of *Public Service Commission vs. United Railways Co.*, 155 Md. 572, and of the Supreme Court of the United States in case of *United Railways Co. vs. West*, 280 U. S. 234. Prior to the decisions in those cases it had been the practice of the Commission to base depreciation allowances on cost. The Commission is aware that this rule of basing depreciation on cost has been applied to certain accounts of steam railroads by the Interstate Commerce Commission since 1907, that it has been applied by the U. S. Census Bureau since 1911, that it is used by the Department of Agriculture and the Bureau of Mines, that it was adopted by the Federal Trade Commission in 1916, that in 1917 it was prescribed by the United States Fuel Administration and the War Ordnance Department, by the Aircraft Production Board in 1918, by the Federal Power Commission in 1921, and that it has been ordered by the Interstate Commerce Commission for telephone companies.

In determining the amount of depreciation to be allowed in this case, while the Commission is aware that the rule which it formerly followed, and which was supported so strongly in the dissenting opinion of Mr. Justice Brandeis in the *United Railways* case, is used by so many eminent agencies, it has no alternative but to base its finding upon present-day value in conformity with the rulings of the Court of Appeals and of the Supreme Court of the United States in the above mentioned cases.

It will be remembered that in the *United Railways* case, the Company claimed an allowance for depreciation based on value. The Commission, believing its claim to be unsound for many reasons, allowed it $883,544, basing this allowance on cost. The Maryland Court of Appeals sustained the Company's position, and the Commission, promptly obeying the order of the Court, increased the allowance by $755,116, to a total of $1,638,670. In order to do this the Commission was compelled to increase street car fares. When the Company appealed to

the Supreme Court of the United States, on the rate of return issue, decided against it by the Court of Appeals, the Commission asked and was granted permission to bring up the issue of depreciation in order to have a review of the findings of the Maryland Court of Appeals upon that point. The Court of Appeals, in passing on the issue raised by the Company, after pointing out that the Commission's opinion indicated that it considered cost and not the present value of the Company's depreciable property in fixing its allowance for depreciation, went on to say:

> "Unquestionably there is authority for that method of calculating a proper depreciation reserve, but in our opinion it is artificial, illogical, and unsound, and ought not to be approved. * * *
>
> "The allowance of a given percentage on the gross income of the company as a method for computing depreciation is said to be justified by accounting usages, but in such a case as this we are not dealing with bookkeeping customs, but with substantive rights protected by constitutional guaranties, and there seems to be no logical reason why the depreciation should not be based upon the actual value of the property itself, rather than upon vague and conjectural inferences drawn from the money the property earns. * * * even so, if the conclusion actually reached was proper, the fact that it was reached by improper methods would not justify us in disturbing it, so that the more important question is whether the base of the calculations by which it was tested was itself lawful. And that depends upon whether the commission should have based its allowance for depreciation upon the original cost of the property, or upon its present value. It actually did use cost and not present value as the basis of its conclusion, and here again it must be said that there is authority for its procedure. But in our opinion it is justified by neither law nor right reason.
>
> "In valuing the property for rate-making purposes, the commission based its conclusion upon its present value and not upon its original cost. * * *. But if it was essential to adopt that method for ascertaining the value of the property to which the rates were applied, it is not easy to see why it should not be adopted in estimating the amount needed to replace that property when it is worn out or becomes obsolete and worthless. If the company paid $100,000 for property now only worth $10,000, it would

be grossly unfair to the public to base its annual depreciation on its cost, and if on the other hand the company paid $10,000 for property now worth $100,000, it would be equally unfair to it to compel it to sell that property to the public at ten per cent. of its real value. These conclusions seem to be self-evident, and, while there is authority to the contrary, they are supported by the reasoning in such cases as the *Havre de Grace Bridge Co. v. Pub. Serv. Comm., supra; Knoxville v. Knoxville Water Co., supra*, and *Michigan Pub. Util. Comm. v. Mich. St. Tel. Co.*, 228 Mich. 658, and from the standpoint of fair play both to the company and the public are inevitable."

When the issue reached the Supreme Court, that tribunal had this to say:

"The allowance for annual depreciation made by the commission was based upon cost. The court of appeals held that this was erroneous and that it should have been based upon present value. The court's view of the matter was plainly right. One of the items of expense to be ascertained and deducted is the amount necessary to restore property worn out or impaired, so as continuously to maintain it as nearly as practicable at the same level of efficiency for the public service. * * * Manifestly this allowance cannot be limited by the original cost, because, if values have advanced, the allowance is not sufficient to maintain the level of efficiency. The utility is entitled to see that from earnings the value of the property invested is kept unimpaired, so that at the end of any given term of years the original investment remains as it was at the beginning. Knoxville v. Knoxville Water Co. 212 U.S. * * * * * This naturally calls for expenditures equal to the cost of the worn-out equipment at the time of replacement; and this, for all practical purposes, means present value. It is the settled rule of this court that the rate base is present value, and it would be wholly illogical to adopt a different rule for depreciation."

In view of these decisions, so clearly set forth, the Commission has determined the Telephone Company's allowance for depreciation in conformity with the lower values of today precisely as it was required to adjust the allowance for the United Railways to conform to the higher values of 1927. And if, as a result of this, the Company finds itself in trouble

with the Interstate Commerce Commission, it will have to adjust such trouble as best it may.

GOING VALUE

The Company claims a going value of $4,500,000.

Although not appraised separately, an analysis of the Commission's price trend and its results show that there is in its finding of total fair value an allowance of approximately $732,000 for this element of the Company's property.

Company Exhibit No. 10 shows that its claim for going value is built up in the following manner:

1.	Carrying charges during the development period on plant cut into service	$4,045,474
2.	Cost of securing subscribers	1,665,272
3.	Training personnel	1,291,832
4.	Development of forms and methods	111,875
5.	Initial issue of Directory	52,040
	Total	$7,166,493

These are all judgment figures, and are given in the testimony of Mr. W. F. Sloan. After having arrived at them by close and detailed study of what he believed the Company to be entitled to for going value, he arbitrarily cut the amount from $7,166,493 to $4,500,000. This also is a judgment figure. It might be suggested with propriety that, if his detailed figures showed that the Company was entitled to a going value of more than $7,000,000 and he felt at liberty to cut more than two and two-thirds millions from it, he might just as readily have cut it to any amount between $4,500,000 and $7,166,493, or even cut it below the figure of $4,500,000. Especially is this so, because he was unable to indicate the proportion of the elements which he said went into going value that he had put into the figure of $4,500,000; nor could he tell what weight he had given to any of these elements in making up his final judgment figure. All he could say was that he had put in what he thought was the fair value of "going value." He felt the Company's going value had increased over the amount which he had placed on it in the 1924 case, but it may be worth

Boring that in that case he testified to a going value of $5,000,000, an amount greater by nearly a million dollars than he claimed in the present case.

The Commission is conscious that it said in its opinion in the Potomac Edison case (Case No. 2074) that "nothing is clearer or more definite than the fact that the courts have required utility commissions to make allowance for 'going value' in determining the reproduction cost of a utility property, and of allowing a reasonable amount for that element of value in the rate base." It still considers that to be the law of the land and has made such an allowance.

The Commission reached its allowance for going value by taking the amount, $1,085,700, allowed by the Statutory Court in the 1924 case with other elements of value in the Company's property and trending them all down to December 31, 1932. The amount of $1,085,700 was obtained by the court by trending the allowance of $705,000, which had been made by the Commission in Case No. 690, to 1923 figures. The Commission in Case No. 690 reached its figure of $705,000 by finding that the actual cost to the Company up to June 30, 1914, "of selling service," in other words "the cost of attaching subscribers," had been $141,000. To this it added the sum of $564,000 found to have been "the cost of organization and preliminary development," which gave it the total of $705,000 "as the value of the intangible or non-physical property of the respondent company." Thus, at that early day it met the requirements later laid down by the Supreme Court in 1924 in *Ohio Utilities Company vs. Public Utilities Commission*, 267 U. S. 359, by making a reasonable allowance for organization and other overhead expenses that necessarily are incurred in reproducing the utility.

The Commission in the 1924 case made that same allowance which was, as stated, trended upward by the court. Now the Commission takes the amount found by the court and trends it to 1932 prices, and gets the figure of approximately $781,782. In addition to this amount specifically allowed as going value, there are included in the Company's capitalized costs, which have been trended by large percentages of direct labor costs representing various overheads, such as officers' salaries, gen-

eral office clerks, stationery and printing, and certain traffic, commercial and administration expenses. These overheads amounted in some years to more than 50 per cent of total direct labor cost. (See People's Counsel Exhibits 38, 39 and 40.)

The Commission feels that this allowance is reasonable and fair and comes within the requirements laid down by the courts. It cannot concede as sound the suggestion of counsel for the Company that the size of the property has anything to do with the amount which ought to be allowed for going value. The Supreme Court has set up a standard by which the right of utilities to an allowance for going value may be measured. That standard is that there shall be "an assembled and established plant, doing business and earning money," *Des Moines Gas Company vs. Des Moines*, 238 U. S. 153, but in no case that we know of has the Supreme Court given directions as to the method to be followed or the amounts to be allowed. Counsel for the Company contend that the Commission is wrong in its position of declining to allow in going value costs of attaching business, training personnel and the like which can be shown to have been paid for out of operating expenses. They cite the recent *Los Angeles Gas* case, P. U. R. 1923 C, 239, *Ohio Utilities Company vs. Commission*, 267 U. S. 359, *Public Utilities Commission vs. New York Telephone Company*, 271 U. S. 23, and *Lincoln Gas and Electric Light Company v. Lincoln*, 250 U. S. 256, among others, to support their position. We find nothing in those cases which indicates any unsoundness in the Commission's position in this respect. Substantially the same issue was raised before the Statutory Court in the 1924 case when Mr. Sloan testified to, and the Company claimed to be entitled to, going value of $5,288,575. The Company had protested against the Commission's refusal to increase the amount which it had allowed in Case 690. Judge Rose, in speaking for the court, said of the Company's argument for an increase in this allowance:

"It is possible to lay a finger on some of the great differences between the Company's experience and the experts' opinions. Each of them takes into account what

one of them calls 'cost of establishing business' and the other 'going value.' Their estimates on this score are many times as great as any amount which the Company expended for that purpose. The Company in 1914 was some thirty years old. It had long before incurred and paid all of the charges for bringing it into the world and for nursing it through infancy, childhood, and adolescence to the full stature of manhood. At that time the Commission allowed it $705,000, to make good what its nurture and education had cost. Apparently it was then quite contented with what had been done. Since then, every dollar that has been used for extension purposes has been treated as an ordinary current expense, and so charged against rates. Mr. Sloan's estimate of the value of this item is $5,388,575, and Mr. Robinson's $4,324,424. Even upon the justifiable assumption that the $705,000 allowed by the Commission in 1914 is equivalent today to almost $1,100,000, Mr. Sloan's estimate is nearly four times as great and Mr. Robinson's nearly three times."

The court therefore accepted the Commission's figure of $705,000 and trended it from 1914 to 1924 prices and allowed the sum which resulted from the trending. This Commission has done as the court did; it has taken the court's finding and trended it to prices as of December 31, 1932. If, of the action of the Statutory Court, to use the language of Mr. Justice Day in his opinion in the Des Moines case, "it cannot be said, in view of the facts of this case, that the element of going value has not been given the consideration it deserves," then the action of this Commission, it seems to us, is supported by that same language.

In the case of the *New York Telephone Company vs. Prendergast*, 36 F. (2d) 54, Circuit Judge Manton presiding, the Court reduced the amount allowed by the Master for going value from $26,000,000 to $10,000,000. In this connection the Court said:

"Plaintiff's claim, which the master considered, that $19,000,000 was required to train its force of employees to their present efficiency, had previously been treated as a cost of operation. That treatment was proper. It proved $5,500,000 for developing records, files, etc., and $4,000,000 for record of subscribers and directories. *These expenses were charged up to operating costs. They may*

not be charged both as expense of operation and as an acquisition of capital. Nine million five hundred thousand dollars was considered as the hypothetical cost of advertising and canvassing to get subscribers. This was a cost for creating good will and a regulated utility cannot estimate good will into its rate base. * * * The claim of $9,500,000, consisting of items for maintenance, depreciation, interest, and taxes between completion of the hypothetically reconstructed plant and the time when it would be running at normal operating capacity, was found by the master to be too speculative. The allowance made by the Commission for going concern value was soundly based, and, therefore, we modify the amount allowed by the master to $10,000,000." (Italics ours.)

In that case, the court found the total value of the Company's property to be $475,390,609, and the allowance of $10,000,000 for going value is 2.10 per cent. of the whole. It is interesting to note that on this Commission's finding of value of $33,210,000, its allowance of $731,762 for going value is 2.2 per cent. of the whole or a little more than the court, over which Judge Manton presided, allowed a company controlled by the same parent.

In the case of *Des Moines Gas Company vs. Des Moines,* 238 U. S. 153, the court said:

"In this case, what may be called the inception cost of the enterprise entering into the establishing of a going concern had long since been incurred. * * * For aught that appears in this record, these expenses may have been already compensated in rates charged and collected under former ordinances."

They were, therefore, not allowed as claimed.

WORKING CAPITAL

The Company makes a claim of $1,700,000 as a fair allowance for working capital.

People's Counsel contends that an allowance of only $509,364 should be made.

The Company's claim is based (1) on the allowance made by the Commission in Case No. 2274 plus one-eighth of an increase

in operating expenses, producing $1,759,000; (2) an allowance such as was made in Case No. 2374, in the Potomac Edison Case No. 3074 and in other cases, of one-eighth the annual operating expenses plus materials and supplies on hand, which the Company claims in its case would amount to $1,722,000; and (3) average requirements for materials and supplies and working cash, which the Company claims will amount to $1,622,000.

In the course of this hearing, when testimony as to working capital was about to be taken, the Commission announced, in order to shorten the case as much as possible, that it intended, unless convincing reasons to the contrary were given, to adhere to its practice of allowing one-eighth of annual operating expenses plus materials and supplies as working capital for the Company. Later, People's Counsel suggested that he wished to offer evidence which, in his opinion, would show that such an allowance as the Commission indicated it might be willing to allow, would be too great an amount to be allowed this Company. Testimony was thereupon taken on this point.

It has been the practice of this Commission to make an allowance for working capital for gas and electric companies of one-eighth their annual operating expenses plus materials and supplies, largely because of the fact that there is a lag of six weeks between the time service is rendered by such companies and the time bills are paid. It had previously allowed the Telephone Company working capital on the same basis. In the case of the Telephone Company, however, it was developed that its bills for Exchange service are sent out and collected in advance. To the extent that they are collected prior to the completion of the month's service the subscriber advances working capital. Telephone Company studies indicate that, on an average, there is a lag of 25 days between the performance of the service for which bills are rendered and the collection of revenues. This lag is thus about one-half of that experienced by electric and gas utilities. Therefore, if an allowance of 25/360 of the proper annual expenses should be allowed, that would seem to meet the situation.

In listing its operating expenses, of which one-eighth is claimed for working capital, the Company has taken all of

such expenses, although there are certain expenses not concerned with the development of working capital. Some of these items of expense do not require any cash outlay until the money has been fully received from the consumers, and other expenses do not involve cash outlays at all. These expenses are pointed out in People's Counsel Exhibit No. 41, which deducts from operating expenses, as shown by the books, donations which are not expenses at all, but are chargeable to surplus; depreciation expense, which is a bookkeeping entry and does not involve a cash outlay; pension note accruals, which is the difference between the amount accrued and the amount actually paid, and which also is a bookkeeping entry. There are eliminated certain taxes which do not have to be paid until after the money for them is collected from the subscribers, and the 1½ per cent. license contract payments to the American Telephone and Telegraph Company, which do not have to be paid until collected. These deductions amount to $3,420,859 of the operating expenses, as shown by the books, of $10,537,140, leaving $7,116,281 to which to apply 25/365, producing a result of $487,416.

The Company made a study, applying this 25/365, not to *expenses* but to *gross revenues* of $12,872,253, showing working cash required by the Company to be, in round figures, $881,000. The Commission feels that the 25/365 ought to be applied to proper operating expenses in order to provide only money necessary to meet immediate payments.

The Company claims an allowance for materials and supplies of $407,452. Of this amount $158,048 is represented by what is known as class "C" stock. This is recovered material which the Company returns to the Western Electric Company. The Western Electric credits the Telephone Company for it and holds it. If the Telephone Company requires it, or any part of it again, it is returned and the Telephone Company is billed for it. It seems clear that this class "C" stock is not owned by the Telephone Company, but, even if it were so owned, it would appear to be in the class of property not used or useful in rendering the service. Therefore, eliminating $158,048 as representing class "C" stock, we get a figure for materials and supplies of $249,404. That amount added to

$487,416, representing 25/365 of $7,116,281 of operating expenses, would give us a total of $736,820 for working capital for the Company, based upon 1932 operation. The Commission believes that this is the proper method by which to compute allowance for working capital, and, applying it to expenses estimated for 1933, it gets an amount of $660,863.

USED AND USEFUL PROPERTY

People's Counsel argued that, owing to the loss of a large number of subscribers and the going out of service of their stations, estimated to be in the neighborhood of 20,000, a large amount of the property of the Company was not now used and useful in serving the public. Therefore, he contended that the value of this property not now in service should not be allowed in the valuation as used and useful property. The Commission cannot accept that view of the situation. It is true that prior to the depression the Company had built to a reasonable extent beyond its immediate needs and since the depression a substantial part of its plant and equipment is not actually in service. The Commission believes, however, that this situation is only temporary and the property represented by the stations which have been disconnected soon will be required for the use of the public.

The Commission does, however, exclude from the valuation the land and buildings at St. Paul and Pleasant Streets to which the Company witnesses have assigned a value of $150,000 for the land and $25,000 for the improvements, or a total of $175,000. Witness Gilbert, testifying for People's Counsel, agreed with the appraisers of the Telephone Company as to the value of the land involved. This property was bought by the Company in 1923 as a site for a proposed office building. The plans of the Company were not carried out, however, and the building was not erected. There is no definite evidence that it ever will be erected. Clearly, in the Commission's opinion, that land and the buildings on it are not now used and useful in the Company's business, and never may be. The Company paid $204,000 for this property in 1923. The Com-

mission finds this amount equivalent to $137,495 as of December 31, 1932, and has deducted that sum in determining the rate base. All the other property which the Company claims is allowed.

RATE OF RETURN

The Company asserts that it ought to have a return of 7½ per cent. on the fair value of its property in order to carry on its business and maintain its credit. It offered two witnesses to testify to this, Mr. Morton M. Prentis, President of the First National Bank, and Mr. Fred G. Boyce, Jr., Vice-President of the Mercantile Trust Company, both of Baltimore. Their testimony was similar in many particulars. All that it is necessary to say of the testimony of these gentlemen is that it was not convincing to the Commission.

As a matter of fact, the Company, so far as the Commission's records disclose, has never earned as much as 7½ per cent. either on the value of the property as found by the Commission, or on its cost, as shown by the Company's books, yet it has prospered. It has been able to secure all the money it has ever needed for the development and expansion of its plant, and for years has paid its parent company 8 per cent. dividends on its total issue of common stock which its parent holds. In addition, it has never failed to pay the regular 7 per cent. dividend on its $3,000,000 issue of preferred stock in the hands of the public; an issue which has consistently sold on the open market around 116 although it is callable at 110, and which has maintained its position in the market throughout the stock market crash and the depression, when other security values were tumbling in all directions like houses of cards. The reason for this is not hard to understand. Of all the Bell companies in the United States there are but two whose earnings show up as well as or better than those of The Chesapeake and Potomac Telephone Company of Baltimore City. These are the Cincinnati and Suburban Bell Telephone Company, of whose stock the American Telephone and Telegraph Company owns 29 per cent., and The Diamond State Telephone Company (of Delaware), which is not subject to Commission regulation. (People's Counsel Exhibit 60.)

It may be that a situation exists in this case somewhat analagous to that which Judge Rose pointed out as existing in the 1924 case, in which the Company claimed an 8 per cent. return. He said of that situation:

> "A history of the present controversy seems, however, to show that the Company makes the contention here (the right to an 8 per cent return) principally as a second line of defense, behind which it may shelter itself in the event that the valuation it puts on its property is too largely reduced * * * the rates which it would have put in force, had the Commission permitted it to do so, would, it calculates, yield it a net revenue not much over two-thirds of that sum, or less than six per cent on what it claims to be a fair value of its property."

In this matter the Commission feels that it cannot do better than to take a position similar in all respects to that taken by the Statutory Court, and expressed so clearly and convincingly by Judge Rose in these words:

> "* * * we take it to be clear that to deny to a utility the opportunity constantly to add to the value of its property out of the rates paid by the public is not confiscation. If the present Company stood alone, either in the sense that it had, unaided, to look after its own financing, or that it did not form what is in reality an integral part of a nation-wide system we might well doubt whether a return of 6 per cent would be sufficient to enable it to raise the money necessary to its growth, and, therefore, it may be, to its life; but such is not the case. It is owned and altogether controlled by the American Telephone & Telegraph Company, hereinafter styled the National Company. In partial return for a substantial annual sum paid by it to the National Company, the latter has agreed to assist it in its financing. According to the table submitted on its behalf, its net earnings have almost always fallen somewhat short of 6 per cent, and yet it has not only lived but it has been able to raise many millions for the expansion of its facilities and the promotion of its business. It is not for us to pass upon questions of policy. It may well be, as the Commission itself in 1916 thought, that the Company should be permitted to earn as much as 8 per cent, if it could. All that we hold is that, if the Company be allowed as much as

6 per cent, its property has not been confiscated. On the other hand, on this record, we are convinced that an enforced schedule of rates, which would make such minimum earning impossible, is in legal effect to take from the Company its property without just compensation therefor."

The Commission regards the foregoing declaration of the Court to be the law of this particular case and will abide by it. It allows therefore, a return of 6 per cent. upon the fair value of the Company's property, used and useful in the service of the public. Also, it finds that a return of 6 per cent., is not only not confiscatory, but in view of the reduced returns now yielded by businesses of all kinds, and the increased purchasing power of the dollar, is fair and reasonable for this company.

ESTIMATE OF REVENUES, EXPENSES AND RETURN FOR 1933, AND DETERMINATION OF AMOUNT APPLICABLE TO REDUCTION OF RATES

The Company presented in its Exhibit No. 37 an estimate of revenues and expenses for the year 1933 which the Commission finds to be reasonable, with the exception of the amount required for depreciation and amortization which the Company estimated to be $2,159,000. The Commission's allowance for this item, based upon present value instead of book cost, is $1,352,284. The reduction of this item of expense results in a corresponding addition to income which is subject to a tax of 13.75 per cent. and the tax item of expense has been increased to that extent. The effect of these adjustments is to increase the estimate of net revenue or return from $2,658,000 to $3,353,793, as shown by the following tabulation:

ESTIMATED REVENUES, EXPENSES AND RETURN FOR 1933

	Company's Estimate	Commission's Estimate
Revenues		
Exchange Service Revenues	$ 9,369,000	$
Toll Service Revenues	2,530,000	
Miscellaneous Operating Revenues	347,000	
Other Telephone Revenues	2,000	
Total Telephone Revenues	$12,248,000	$12,248,000
Expenses		
1. Current Maintenance	$ 1,716,000	$ 1,716,000
2. Depreciation and Amortization	2,159,000	*1,352,284
3. Traffic	1,808,000	1,808,000
4. Commercial	1,255,000	1,255,000
5. General and Miscellaneous	548,000	548,000
6. License Payment to A. T. & T. Co.	175,000	175,000
7. Uncollectible Operating Revenue	145,000	145,000
8. Taxes Assignable to Operations	1,513,000	*1,628,923
9. Rent Expense and Deductions	174,000	174,000
10. Amortization of Rate Case Expenses	20,000	20,000
Total Telephone Expense	$ 9,590,000	$ 8,894,207
Net Telephone Revenues	$ 2,658,000	$ 3,353,793
Value of Property December 31, 1932, less Working Capital		$ 32,610,327
**Deduct average increase in Depreciation Reserve less average increase in Fixed Capital		650,000
		$ 31,960,327
***Add allowance for Working Capital		660,863
Average value of Rate Base for 1933		$ 32,621,190
Return at 6 per cent. on this Base		$ 1,957,271
Excess of estimated net revenue over fair return		$ 1,396,522

*Depreciation allowance is 2.65 per cent. of Commission's value of (gas) fixed capital, as of December 31, 1932.

Item No. 3 is increased to the extent of 13.75 per cent. of the difference between the Company's estimate and the Commission's estimate for Item No. 2.

**Based upon nine months actual and three months estimated.

***23/365 of (Item 1, Cash Disbursements of Item 2, Items 3, 4, 5 (less pension fund accruals), 7, 9 and 10), plus $249,404 for materials and supplies.

FINDINGS OF VALUE AND RETURN

The Commission finds the average value of the Company's property, employed in the public service in 1933, to be $22,621,190. A return of 6 per cent. on this base is $1,357,271, and this is $1,396,522 less than the return that will be realized from existing rates. The Commission, therefore, finds the existing rates to be unjust and unreasonable and will order an appropriate reduction.

While aware of all the efforts which are being made to bring about a general rise in prices, which are reflected in a rise of 13.1 per cent. in the All Commodities Index since December 31, 1932, and, while being desirous of giving full consideration to the uncertainties which exist with respect to such estimates as are here made for the future, the Commission feels that a reduction of approximately $1,000,000 should be made in net revenue.

Such a reduction would involve a decrease in the tax expense item to the extent of the 2 per cent. gross revenue tax, the 1.5 per cent. license tax paid to the American Telephone and Telegraph Company and the 13.75 per cent. Federal income tax. Therefore, to accomplish a reduction of $1,000,000 net, a reduction of $1,200,000 must be made in gross revenue.

The Commission will order the Company to file amended schedules of rates and charges for telephone service which will result in a reduction of approximately $1,200,000 in its gross annual revenues, giving special attention to any inequities which may have become apparent since the rate schedules were last revised and to the proper reclassification of exchanges which have outgrown the classifications given them, but only to the extent that such reclassification can be made without increasing any existing rates. There shall be included in this reduction the re-establishment of five cent toll charges between Baltimore City and each of the following four suburban exchange areas which lie contiguous to the City, viz: Catonsville, Towson, Pikesville and Woodlawn. As a result of the increase in rates following the 1924 case, these toll charges were raised from five to ten cents, and the Commission is of the opinion that the five cent charge should now be restored.

ORDER No. 24065

In the Matter of The Rates and Charges of THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY OF BALTIMORE CITY	Before the Public Service Commission of Maryland
	Case No. 3424

The above entitled case having been duly heard and submitted and full investigation of the matters and things involved having been had and the Commission, on the date hereof, having rendered and filed an opinion containing its findings of fact and conclusions therein, which said opinion is hereby referred to and made a part hereof,

IT IS, THEREFORE, this 28th day of November, in the year Nineteen Hundred and Thirty-three, by the Public Service Commission of Maryland,

ORDERED: (1) That The Chesapeake and Potomac Telephone Company of Baltimore City be, and it is hereby, directed and required to file with the Commission not later than December 20, 1933, amended schedules of rates and charges for telephone service furnished by the said Company, which, when accepted by the Commission and made effective, will result in a reduction of approximately $1,200,000 in the gross annual revenues of the said Company, and to charge, in accordance with the said amended schedules, for all service rendered and billed on and after January 1, 1934.

(2) That this order shall become effective on the date hereof and shall remain in effect until the further order of the Commission in the premises.

(3) That The Chesapeake and Potomac Telephone Company of Baltimore City shall furnish this Commission accurate and complete statements under oath, and in convenient form, setting forth the revenues, operating expenses and other expenditures of the Company during each month; such reports

to be furnished as soon as may be reasonably practicable and convenient after the end of each calendar month during the period this order remains effective.

(4) That a copy of this order and a copy of the opinion hereinbefore referred to and filed herewith be served upon the said The Chesapeake and Potomac Telephone Company of Baltimore City, and that the said Company within ten (10) days of the date of service of such copy shall notify the Commission in writing whether or not it will accept and abide by the same.

HAROLD E. WEST,
J. FRANK HARPER,
STUART PURCELL,
Commissioners.

[fol. 91] AMENDED ORDER, DATED APRIL 2, 1934, OF THE PUBLIC SERVICE COMMISSION OF MARYLAND, AMENDING NUNC PRO TUNC THEIR ORDER NO. 24065 OF NOVEMBER 28TH, 1933—Filed 3rd April, 1934

Public Service Commission of Maryland

Order No. 24985

Before the Public Service Commission of Maryland

Case No. 3424

In the Matter of the Rates and Charges of the Chesapeake and Potomac Telephone Company of Baltimore City

Whereas, questions having arisen as to the meaning and effect of Order No. 24065, entered by the Commission in the above entitled case on November 28th, 1933, and a stipulation having been filed in the District Court of the United States for the District of Maryland, In Equity No. 2240, in the cause entitled The Chesapeake and Potomac Telephone Company of Baltimore City v. Harold E. West et al., for the purpose of determining such questions, whereby it was agreed and stipulated therein that said Order No. 24065 should be amended as hereinafter appears and that such amendment should be made nunc pro tunc as if such amendment had been made at the time of entering such Order No. 24065,

It is, therefore, this 2nd day of April, in the year Nineteen Hundred and Thirty-four, by the Public Service Commission of Maryland, pursuant to the amended stipulation, dated March 31st, 1934,

[fol. 92] Ordered that paragraph (1) of Order No. 24065 entered herein by the Commission on November 28, 1933, be, and it is hereby, amended to read as follows:

(1) That The Chesapeake and Potomac Telephone Company of Baltimore City be, and it is hereby, directed and required to file with the Commission not later than December 20, 1933, amended schedules of rates and charges for telephone service furnished by the said Company, which, when accepted by the Commission and made effective, will

result in a reduction of not less than $850,000 in the net annual revenues of the said Company from its intrastate business and operations, and to charge in accordance with the said amended schedules for all service rendered and billed on and after January 1, 1934.

And it is further ordered that the said Order No. 24065 so amended as aforesaid shall be and the same is hereby made effective in all respects as of November 28, 1933, the date of the said Order No. 24065, as fully and to the same extent as though the said Order No. 24065 as herein amended had been entered on November 28, 1933.

Harold E. West, J. Frank Harper, Steuart Purcell, Commissioners.

[fol. 93] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER GRANTING TEMPORARY RESTRAINING ORDER—Filed December 13, 1933

This day came the plaintiff, The Chesapeake and Potomac Telephone Company of Baltimore City, by its solicitors, and moved the Court for a temporary restraining order in accordance with the prayer of its verified bill of complaint filed on the 13th day of December, 1933, restraining the defendants therein named, and each of them, from any attempt to compel the plaintiff, its officers, agents and employees, to observe or put in force on January 1, 1934, or to observe or keep in effect thereafter, any schedule of rates or charges for telephone service reducing the revenue of the plaintiff as required by the order made by the Public Service Commission of Maryland on November 28, 1933, filed as Plaintiff's Exhibit A with said bill of complaint; and, further, restraining the said defendants and each of them from taking or initiating any steps or proceedings [fol. 94] against the plaintiff, its officers, agents or employees, to enforce any penalties or any other remedy for disregarding the requirements of said order;

And it appearing that notice has been given to the defendants of the proposed application for this order, and the defendants being represented by counsel now present, and

in support of its said motion plaintiff having tendered to the court the several affidavits of Harry C. Gretz, Jr. L. Dawson Speer, William E. Ferguson, Frank H. Frainie, Charles A. Cummins, Willard L. Humes, John B. Ferguson, William F. Sloan, E. V. Cox, J. K. Crosland, August P. Gompf, Morton M. Prentis, and Fred G. Boyce; and it appearing to the court from said verified bill of complaint and affidavits that if the allegations and statements therein shall be established by the subsequent proceedings in this case any schedule of telephone rates such as is required by said order of the Public Service Commission complained of in said bill of complaint and filed therewith as Plaintiff's Exhibit A, if enforced will confiscate the property of the plaintiff within the State of Maryland and result in immediate, irreparable and continuing injury, loss and damage to the plaintiff, which injury, loss and damage will result before a hearing can be had upon the plaintiff's application for an interlocutory injunction for the reason that said order of November 28, 1933, by its terms became effective on the said date of its passage, and the reduction in rates and charges thereby ordered becomes effective at midnight of December 31, 1933, and said order would be enforced if this order were not granted;

It is therefore hereby ordered and decreed that the defendants Harold E. West, J. Frank Harper and Steuart Purcell, the persons constituting the Public Service Com-[fol. 95] mission of Maryland, be and they are hereby severally restrained until the further order of the Court from attempting to compel the plaintiff, its officers, agents and employees, to observe or put in force on January 1, 1934, or to observe or keep in effect thereafter, any schedule of rates or charges for telephone service reducing the revenue of the plaintiff as required by the said order of the said Public Service Commission made on November 28, 1933, filed as Plaintiff's Exhibit A with said bill of complaint; and that the defendants be and they are hereby restrained until the further order of the Court from taking or initiating any steps or proceedings against the plaintiff, its officers, agents or employees, to enforce any penalties or any other remedy against the plaintiff, its officers, agents or employees, for disregarding the requirements of said order.

This order shall not take effect until the plaintiff shall file with the Clerk of this Court a good and sufficient bond

with good and sufficient surety, in the penal sum of Three Hundred Thousand Dollars ($300,000.00), to be approved by this Court or the Clerk thereof, conditioned for the prompt payment of all costs and damages which may be incurred or suffered by any party who may be found to have been wrongfully enjoined or restrained hereby, and further conditioned so that in the event that an interlocutory injunction as prayed for in the said bill of complaint shall not be granted, the plaintiff shall refund to its several subscribers affected hereby, either in cash or by credit upon subsequent bills, any sums paid by them in the meantime in excess of the sums ultimately determined to be chargeable to them pursuant to the provisions of the said order of the Public Service Commission hereinbefore referred to, the enforcement of which is hereby temporarily enjoined.

[fol. 96] And it is further ordered that the plaintiff shall not during the time this order is in effect charge or collect for its intrastate telephone service within the State of Maryland any rate or rates in excess of those set forth in the schedules of the plaintiff now on file with the Public Service Commission;

And it is further ordered that in the meantime and until the expiration of this order all bills sent by the plaintiff to its subscribers for telephone service to which the rates prescribed by the said order of the said Public Service Commission, which is hereby enjoined, would otherwise apply, shall, commencing with the bills which include any rates or charges for the month of January, 1934, have enclosed therewith a printed card or paper setting forth a notice in substantially the following words:

"Notice to Subscribers

Keep the enclosed bill. If the order of the District Court of the United States for the District of Maryland, made on December 13, 1933, is not continued in effect you may be entitled to a refund and the enclosed bill will be evidence of the amount for which you have been charged.

The Chesapeake and Potomac Telephone Company of Baltimore City."

Dated at Baltimore, Maryland, this 13th day of December, 1933.

William C. Coleman, United States District Judge.

RECITAL AS TO BOND

(Bond, with United States Fidelity and Guaranty Company as surety, in the sum of $300,000.00 filed with the Clerk of the U. S. District Court December 13, 1933.)

DOCKET ENTRY

December 13, 1933.—Bond approved and filed.

[fol. 97] IN UNITED STATES DISTRICT COURT

[Title omitted]

ANSWER OF DEFENDANTS—Filed December 22, 1933

To the Honorable, the Judge of the District Court of the United States for the District of Maryland:

The Answer of Harold E. West, J. Frank Harper and Steuart Purcell, the persons constituting the Public Service Commission of Maryland, and the defendants in the above entitled cause, unto the Bill of Complaint against them exhibited by the Chesapeake and Potomac Telephone Company of Baltimore City, a corporation, and the Plaintiff in said cause.

1. Answering the allegations contained in Paragraph 1 of said Bill of Complaint, these defendants admit that the said plaintiff Company is a corporation, duly organized and existing under, and pursuant to, the laws of the State of Maryland, and having its principal office in Baltimore City, [fol. 98] in said State; and that, during all the times, referred to in said Bill of Complaint, it has owned and operated a telephone system in and throughout said State of Maryland, and furnished to the public both intrastate and interstate telephone service.

2. Answering the allegations contained in Paragtaph 2 of said Bill of Complaint, these Defendants admit that they are the persons constituting the Public Service Commission of Maryland, and that said Commission is an ad-

ministrative body, duly created by the statutes of said State (Code of Public General Laws of Maryland, Article 23, Title: Corporations, Sub-title; Public Service Commission), and that they are citizens and residents of the State and District of Maryland, and that, as such Public Service Commission, they are charged with the power and duty of carrying out the provisions of the Public Service Commission Law of Maryland, but these Defendants aver that the Acts, of which the said plaintiff Company complains, in said Bill of Complaint, were performed by them under the real, and not pretended, authority of said law.

3. Answering the allegations contained in Paragraph 3 of said Bill of Complaint, these defendants admit that the suit, instituted in this cause, is of a civil nature, in equity, and was brought for the purpose of enjoining the enforcement of an order of these defendants, as the Public Service Commission of Maryland, dated November 28, 1933, whereby the said plaintiff Company, was directed and required to file with said Commission, not later than December 20, 1933, amended schedules of rates and charges for telephone service, furnished by the said plaintiff Company, which, when accepted by said Commission and made effective, would result in a reduction of approximately one million, two hundred thousand dollars ($1,200,000) in the [fol. 99] gross annual revenues of the said plaintiff Company; and to charge, in accordance with said amended schedules, for all service rendered, and billed, on and after January 1, 1934. And, further answering said Paragraph 3 of said Bill of Complaint, these defendants deny that this cause can be said to arise under the Constitution and Laws of the United States in that said order of these defendants, and any rates and charges, to be made effective thereunder, are unjust and unreasonable and confiscatory of the said plaintiff Company's property, used and useful in furnishing to the public telephone service, within the State of Maryland, or that their said order, by reason of any such circumstances, seeks to deprive the said plaintiff Company of its property without due process of law, and denies to the said plaintiff Company the equal protection of the laws, in violation of its rights, under the 14th Amendment to the Constitution of the United States; or that said order is, by reason of any such circumstances, null and void.

And further answering said Paragraph 3 of said Bill of

Complaint, these defendants admit that the amount in controversy, in this cause, exceeds the sum or value of three thousand dollars ($3,000), exclusive of interest and costs.

4. Answering the allegations contained in Paragraph 4 of said Bill of Complaint, these defendants admit that the rates for telephone service, now being charged by the said plaintiff Company, are, with certain minor exceptions, rates which were duly filed by the said plaintiff Company with the Public Service Commission of Maryland, in pursuance of an order of said Commission, No. 8889, dated March 18, 1925, and that said rates, except as modified in minor re- [fol. 100] spects, as above mentioned, have been continuously in effect since April 1, 1925, up to the present time.

5. Answering the allegations contained in Paragraph 5 of said Bill of Complaint, these defendants admit that, on January 19, 1933, they, as the Public Service Commission of Maryland, instituted, of their own motion, an investigation into the rates and charges of the said plaintiff Company; that, thereafter, hearings were had, commencing on May 2, 1933, and ending on or about September 18, 1933, and that on November 28, 1933, they, as the Public Service Commission of Maryland, entered their formal order, No. 24065, in a case No. 3424, "In the Matter of the Rates and Charges of the Chesapeake and Potomac Telephone Company of Baltimore City"; and that, by said order, they found the existing rates of the said plaintiff Company to be unjust and unreasonable, and directed and required said Plaintiff Company to file with the Public Service Commission of Maryland, not later than December 20, 1933, amended schedules of rates and charges for telephone service, furnished by the said plaintiff Company, which would result in a reduction of one million, two hundred thousand dollars ($1,200,000) in the gross annual revenues of the said plaintiff Company; and ordered the said plaintiff Company to charge, in accordance with said amended schedules, for all service, rendered and billed, on and after January 1, 1934; and provided that said order should become effective as of the date thereof (Nov. 28, 1933), and should remain in effect until the further order of the said Commission in the premises.

And, further answering said Paragraph 5 of said Bill of Complaint, these defendants deny that the return to the

said plaintiff Company from its intrastate business, under [fol. 101] such rates as it would be permitted to charge by said order, would be less than a fair return upon the fair and reasonable value of the property of the said plaintiff Company, used or useful in furnishing its intrastate telephone service in the State of Maryland, and exclusively devoted to the rendition of that service. On the contrary, these defendants allege that the return to the said plaintiff Company from its intrastate business, under such rates as it would be permitted to charge by said order, would be a fair return upon the fair and reasonable value of said property of the said plaintiff Company.

6. Answering the allegations contained in Paragraph 6 of said Bill of Complaint, these defendants deny that, as of December 31, 1932, the cost of the property of the said plaintiff Company, in the State of Maryland, used and useful in furnishing its intrastate telephone service to the public, and exclusively devoted to the rendition of that service, was $44,830,252 (including working capital and excluding going value); or that the cost of reproduction of said property, (including working capital and going value) was $47,363,233; or that the cost of reproduction of said property, less depreciation, (but including working capital and going value) was $41,829,532; or that the fair and reasonable value of said property, (including working capital and going value) is not less than $41,829,000; and, aside from other reasons, these Defendants make this denial because the said plaintiff Company has no means of determining accurately the proportion of its property in Maryland, devoted exclusively to rendering intrastate service, or the proportion of its property in Maryland devoted exclusively to rendering interstate service. These defendants aver that the figures set forth in Paragraph 6 of said Bill of Complaint are mere guesses or estimates, which are, in no sense, [fol. 102] conclusive or trustworthy, because, as admitted by the said plaintiff company, through its counsel, at the hearing before these defendants, in said Case No. 3424 (Record, page 6440), the books and records of the said plaintiff Company "do not reflect any complete division, separation or apportionment of the Company's property, revenues and expenses, as between intrastate service and interstate service." These defendants further aver that it was for that reason that it was, at the outset of the proceed-

ings before these defendants, in said Case No. 3424, agreed that, in the effort to find the fair value of the said plaintiff Company's property in Maryland, no attempt at segregation into intrastate or interstate of the property or revenues of the said plaintiff Company would be made, because, as stated by counsel for the said plaintiff Company, at the conclusion of the hearing in said Case, No. 3424, "differences between the two bases (intrastate and interstate) would not materially or substantially affect the final conclusions as to the proper rates and charges for intrastate telephone service in the State of Maryland," and that the said plaintiff Company would raise no objection "to the use and consideration by the Commission of the statements as to the total property, revenues and expenses of the total business of the Company for all purposes, for which statements of the property, revenues and expenses, exclusively applicable to intrastate service, would or might be used."

These defendants also deny that the said plaintiff Company statement that the cost of its property to it contains nothing on account of going value is correct. On the contrary, they aver that said cost does contain a large measure of what is claimed to be going value; that certain costs are included in the property accounts of the said Company rep- [fol. 103] resenting going value, and that, in addition, certain expenditures, claimed as going value, have already been paid for by the said Company's subscribers in the operating expenses of the said Company, and that, therefore, the said Company should not have going value allowed to it twice, i. e., in the value of its property, on which it may earn a return, and in its expenses, which are paid by its customers.

These defendants further say that they have no proper knowledge as to how far the cost to the said plaintiff Company of its property, used and useful in its intrastate telephone business, in the State of Maryland, has been diminished, since Dec. 31, 1932, as set forth in said Paragraph 6 of said Bill of Complaint, and that they, therefore, neither admit nor deny the allegations, relating to that matter, contained in said paragraph of said bill, but demand full and sufficient proof thereof, as they do also of the allegations in said bill as to the exclusion of franchises from, and the inclusion of certain amounts of going value in, the statements of cost of reproduction, production cost less depreciation,

and fair and reasonable value, set forth in said Paragraph 6 of said bill.

7. Answering the allegations contained in Paragraph 7 of said Bill of Complaint, these defendants deny that the figures given in said paragraph, purporting to show the said plaintiff Company's net earnings, derived from its intrastate business within the State of Maryland, under existing rates, actually represent such net earnings; and aver that such figures are merely estimates or guesses, because, as admitted by the counsel for the said Company, at said hearing before them, the said Company's books are not set up to show any complete division, separation or apportionment of the said Company's property, revenues and expenses, as between intrastate and interstate service, and that, therefore, [fol. 104] the percentages set forth in said Paragraph 7 of said Bill of Complaint, as indicating the rate of return on the property of the said Company, devoted to intrastate business, having no substantial base on which to rest, are also mere guesses or estimates.

8. Answering Paragraph 8 of said Bill of Complaint, these defendants deny that the figures given in said paragraph, purporting to show net earnings, derived from the intrastate telephone service, within the State of Maryland, of the said plaintiff Company, the percentage rate of return therefrom, the cost of the said Company's property, used and useful in furnishing said service, and exclusively devoted to the rendition thereof, and the investment cost of such property are trustworthy, or that they are anything more than mere guesses or estimates, for the reason, among others, that it was admitted by the counsel of the said Company, at the hearing before these defendants, that the said Company's books are not set up to show any complete division, separation or apportionment of the said Company's property, revenues and expenses, as between interstate and intrastate business. And these defendants further say that all, or substantially all of said Company's property is used interchangeably for both its interstate and intrastate business to such an extent that it is impossible to arrive at any accurate division of its property, used exclusively for either interstate or intrastate business.

9. Answering the allegations contained in Paragraph 9 of said Bill of Complaint, these defendants say that they are

not familiar enough, and, in the nature of things, could not well be familiar enough, with many of the details, relating to the actual operations of the said plaintiff Company, to admit or deny that its telephone business, within the State [fol. 105] of Maryland, has been, in all respects, conducted efficiently and economically, during all the times, in said Bill of Complaint referred to, and is so being conducted, at the present time. They, therefore, demand full and sufficient proof of said allegations.

10. Answering the allegations contained in Paragraph 10 of said Bill of Complaint, these defendants deny that the fair, annual rate of return, which the said Plaintiff Company is entitled to earn, under rates, imposed upon it by public authority, is an amount equal to not less than 7½ per cent upon the fair and reasonable value of its property, used and useful in the rendition of the service, covered by the rates in question, or upon any such inordinate rate base, computed from such fair and reasonable value; and these defendants aver that their reasons for this denial are fully set forth in their opinion, referred to in said Paragraph 5 of said Bill of Complaint, and made a part of the said plaintiff Company's "Exhibit A", mentioned in said paragraph.

11. Answering the allegations, contained in Paragraph 11 of said Bill of Complaint, these defendants deny that the rates of the said plaintiff Company for telephone service, established, as stated in Paragraph 4 of said Bill of Complaint, and now in force and effect, are not more than just and reasonable rates, and are not yielding to the said plaintiff Company in excess of a fair return.

12. Answering the allegations contained in Paragraph 12 of the said Bill of Complaint, these defendants admit that the net earnings of the said plaintiff Company, derived from the use of its telephone property, located in the State of Maryland, are intended to be, and will be, reduced by their said order of November 28, 1933, complained of in said Bill of Complaint, by not less than the sum of One [fol. 106] Million Dollars ($1,000,000) per annum; but these defendants neither admit nor deny that the total net earnings of the said plaintiff Company, derived from what it is pleased to call, throughout its Bill of Complaint, its "intrastate telephone business within the State of Mary-

land'' will be reduced by the sum of One Million Dollars ($1,000,000), per annum, or any other definite figure, for the reason that the said Company's books are not set up to show any complete division, separation or apportionment of the said Company's property, revenues and expenses, as between interstate and intrastate business. And these defendants further say that all, or substantially all of said Company's property is so intermingled, and is used interchangeably, for both its interstate and intrastate business, to such an extent, that it is impossible to arrive at any accurate division of its property, used exclusively for its interstate or intrastate business, or any accurate allocation of revenues derived from interstate or intrastate business.

These defendants further deny that said order of the Public Service Commission will not permit the said plaintiff Company to earn a fair return upon the fair and reasonable value of its property, within the State of Maryland, used and useful in furnishing to the public its intrastate telephone service, and exclusively devoted to the rendition of that service, or that said order is, for any such reason, unlawful and confiscatory in effect, and, therefore, null and void; or that the same, if enforced, would deprive the said plaintiff Company of its property without due process of law, and deny to the said plaintiff Company the equal protection of the laws, in violation of its rights, under the provisions of the 14th Amendment to the Constitution of the United States.

These defendants aver that said order of the Public Service Commission will permit the said plaintiff Company [fol. 107] to earn a fair return upon the fair and reasonable value of all its property, within the State of Maryland, used and useful in furnishing to the public its telephone service.

13. Answering the allegations contained in Paragraph 13 of said Bill of Complaint, these defendants deny that, if their said order is enforced, and the said plaintiff Company compelled to charge rates, and make charges, in compliance therewith, it, though practicing all reasonable economy, consistent with adequate and efficient service to the public, would be prevented from earning any return in excess of 2.6 per cent per annum, upon the fair and reasonable value of its property, in the State of Maryland, used

and useful in furnishing to the public its intrastate telephone service, and exclusively devoted to the rendition of that service, and from earning any return, in excess of 2.3 per cent per annum, upon the cost of said property.

14. Answering the allegations contained in Paragraph 14 of said Bill of Complaint, these defendants admit that, unless restrained and enjoined by this Honorable Court, they will, if rendered necessary by the action of the said plaintiff Company, seek to compel the said plaintiff Company to comply with their said order No. 24065, dated Nov. 28, 1933, and, in the event of non-compliance with it, to enforce the penalties, prescribed by the laws of the State of Maryland, and that the said plaintiff Company, its directors, officers and employees might be compelled to file amended schedules of rates and charges, as in said order provided, and might be deterred and prevented by the threat of said penalties from charging any rates other than rates that might reduce the said plaintiff Company's gross revenues by One Million Two Hundred Thousand Dollars [fol. 108] ($1,200,000.); but these defendants deny that the said plaintiff Company would thereby be forced to submit to confiscation of its property, without due process of law, and in violation of its rights under the Constitution of the United States, as alleged in said Bill of Complaint, and would be subjected to great and irreparable loss and damage.

15. Answering the allegations contained in Paragraph 15 of said Bill of Complaint, these defendants admit that, unless they are restrained and enjoined, as prayed in said Bill of Complaint, some of said plaintiff Company's subscribers might be induced and caused to resist and refuse payment of any rates other than rates reduced, as prescribed in, and by, said order; that the present number of said plaintiff Company's accounts with its subscribers, in the State of Maryland, is very large, though the exact number is unknown to these defendants, and that the present average monthly bill, rendered to them, on account of telephone service, is small, though how small is unknown to these defendants; and that, because of the nature of the business of the said plaintiff Company, and the fact that the amounts due, monthly, from such subscribers, are generally small, it might be an onerous, whether an imprac-

ticable, task, or not, for the said plaintiff Company to enforce collection, thereof by actions of law.

These defendants further admit that the practical way, whether the only way or not, for the said plaintiff Company to enforce collection of its rates and charges would be by cutting off and refusing service, upon default in payment of its bills, rendered monthly therefor, and that some of the said plaintiff Company's subscribers, whether all or not, might institute suits in various jurisdictions, throughout the State of Maryland, to restrain the said plaintiff Company from cutting off and denying service for non-[fol. 109] payment of bills, and for damages, and that the said plaintiff Company might thereby be subjected to a considerable—whether endless or not—multiplicity of suits. These defendants further admit that, generally speaking, the issues, which would be presented in each suit, are represented, and should, and will probably, be decided, in this cause.

16. Answering the allegations contained in Paragraph 16 of said Bill of Complaint, these defendants are willing to admit, for the purposes of this cause, that the said plaintiff Company has no plain, speedy, or adequate remedy at law, assuming that it is justly entitled to any remedy of any kind.

And, answering generally said Bill of Complaint, these defendants allege that their said Order No. 24065, dated Nov. 28, 1933, is, for the reasons, set forth in their said opinion, accompanying the same, to say nothing of other reasons that might have been expressed by them, in every respect, a fair, just, reasonable, and lawful order, highly promotive of the public welfare, and yet not inflicting any wrong or injustice, whatsoever, upon the said plaintiff Company.

And having fully answered said Bill of Complaint, these defendants pray that they may be hence dismissed with their reasonable costs.

Harold E. West, Chairman of the Public Service Commission of Maryland. Wm. Cabell Bruce, General Counsel of the Public Service Commission of Maryland.

[fol. 110] *Duly sworn to by Harold E. West. Jurat omitted in printing.*

[fols. 111 & 112] IN UNITED STATES DISTRICT COURT

DOCKET ENTRY

March 6, 1934.—Order of Court setting the application for interlocutory injunction herein for hearing March 12 next, and pursuant to Sec. 380, Title 28 U. S. C. A., calling to assistance to hear and determine same Hon. Morris A. Soper and Hon. W. Calvin Chesnut, filed.

[fols. 113 & 114] IN UNITED STATES DISTRICT COURT

[Title omitted]

STIPULATION AS TO CERTAIN OPERATING EXPENSES—Filed March 16, 1934

It is hereby stipulated and agreed by and between the parties, by their respective counsel, for the purpose of determining the issues arising in the above entitled cause only and for the further purpose of expediting the hearing thereof as follows:

1. That the payment made annually by the plaintiff to the American Telephone and Telegraph Company, under the License Contract, is a proper charge to plaintiff's operating expenses, and is not an issue in this cause.

2. That the annual accruals for Pension Fund purposes are a proper charge to plaintiff's operating expenses and is not an issue in this cause.

Dated this 15th day of March, 1934.

Charles McHenry Howard, Raymond S. Williams, R. A. Van Orsdel, T. Baxter Milne, Attorneys for Plaintiff. Richard F. Cleveland, John Henry Lewin, Herman M. Moser, Attorneys for Defendants.

[fol. 115] IN UNITED STATES DISTRICT COURT

[Title omitted]

STIPULATION AS TO LAND AND CERTAIN BUILDINGS—Filed March 16, 1934

It is hereby stipulated and agreed by and between the parties hereto, by their respective counsel, for the purposes

of determining the issues arising in the above entitled cause only and for the purpose of expediting the hearing thereof, as follows:

1. If the lands owned by the plaintiff are to be valued separately from the other property of the plaintiff:

(a) The present aggregate fair value of the several pieces and parcels of land owned by the plaintiff and located in the City of Baltimore, would be the aggregate sum of $456,905.00, exclusive of any undistributed construction costs of the plaintiff.

(b) The present aggregate fair value of the several pieces and parcels of land owned by the plaintiff and located in the State of Maryland outside of the city of Baltimore, would be the aggregate sum of $132,882.00, inclusive of the undistributed construction costs of the plaintiff.

[fol. 116] 2. If the buildings owned by the plaintiff are to be valued separately from the other property of the plaintiff:

(a) The reproduction cost new as of December 31, 1932 and December 31, 1933, of certain miscellaneous structures listed on Schedule A hereto attached would be the aggregate amount of $6,149.00, exclusive of undistributed construction costs of the plaintiff.

(b) The reproduction cost new as of December 31, 1932, and December 31, 1933, of certain buildings owned by the plaintiff and located on the Eastern Shore of Maryland and in Western Maryland, as listed on Schedule B hereto attached would be the aggregate amount of $261,651.00, exclusive of any applicable architects' fees and the undistributed construction costs of the plaintiff.

The defendants hereby waive specific proof as to the several matters and things herein contained.

Provided, however, and it is hereby agreed that nothing herein contained shall be construed to affect in any way the Defendant's contention and right to offer evidence that the value of the Plaintiff's property should be trended as a whole or that the value of the lands and/or buildings

owned by the Plaintiff may be trended or as to the extent of any such trends.

Dated this 15th day of March, 1934.

Charles McHenry Howard, Raymond S. Williams, R. A. Van Orsdel, T. Baxter Milne, Attorneys for Plaintiff. Richard F. Cleveland, John Henry Lewin, Herman M. Moser, Attorneys for Defendants.

[fol. 117] SCHEDULE "A" TO STIPULATION

Attached to Stipulation Dated March 15th, 1934

Miscellaneous Structures

Buildings	Book cost 12-31-32 (adjusted to exclude company undistributed cost)
Aberdeen Storehouse	$ 71.00
Arbutus Garage	461.00
Baltimore—	
Elgin Ave. and Payson St.	2,737.00
Cambridge Garage	302.00
Cockeysville Pumphouse	51.00
Cockeysville Garage	253.00
Elkridge Storehouse	20.00
Frederick Storehouse	475.00
Pikesville Garage	416.00
Ridgely Garage	520.00
Sykesville Garage	555.00
Westminster Storehouse	253.00
Wilna Storehouse	35.00
Total	$6,149.00

T. B. M. H. M. M.

[fol. 118] SCHEDULE "B" TO STIPULATION

To Stipulation Dated March 15th, 1934

Company's Buildings Located on Eastern Shore

	Construction cost	
Cambridge	$16,730	
Denton	13,518	
Easton	15,750	
Elkton	9,411	
Hillsboro	1,689	
Ridgely	2,429	
Salisbury	51,257	
Total		$110,784

Company's Buildings Located In Western Maryland

Cumberland (C. O.)	$50,336	
Cumberland (Dist. Office)	4,995	
Frederick	19,258	
Hagerstown (C. O.)	43,817	
Hagerstown (Dist. Office)	13,108	
Sykesville	8,215	
Westminster	11,138	
Total		$150,867

Total aggregate construction costs (exclusive of any applicable architects' fees, and of Telephone Company's Undistributed Construction Costs) $261,651

T. B. M. H. M. M.

[fol. 119] IN UNITED STATES DISTRICT COURT

[Title omitted]

AMENDED STIPULATION AS TO INTRASTATE BUSINESS—Filed March 31, 1934

It is hereby stipulated and agreed by and between the parties hereto, that the parties accept, and that the Court may adopt, the following statement of facts:

1. That the property of the plaintiff used and useful in rendering and exclusively devoted to the rendition of intrastate service is 85% of the property of the Plaintiff used and useful in rendering both interstate and intrastate service.

2. That the net revenues derived by the plaintiff, from its intrastate operations and business under its existing rates and charges, are 85% of the net revenues derived by the plaintiff, under its existing rates and charges, from its total operations and business.

3. Questions having arisen as to the meaning and effect of the order of the Public Service Commission of Maryland, [fol. 120] to enjoin the carrying out of which this suit was brought, it is hereby agreed and stipulated as follows:

a. That said Order No. 24065 of the Public Service Commission of Maryland, shall be amended so as to direct that the plaintiff file rate schedules which will, when accepted by the Commission, result in a reduction of not less than $850,000 in the net annual revenues from the intrastate business and operations of the plaintiff, instead of directing that such amended rate schedules be such as will result in a reduction of approximately $1,200,000 in the gross annual revenues of the plaintiff.

b. The plaintiff assents to such amendment of said order being made nunc pro tunc, and to its progress and determination of this cause in all respects as if such amendment had been made prior to the institution of this suit, and agrees to procure the assent of the surety on the bond heretofore given under the terms of a restraining order heretofore passed in this cause, to such amendment.

c. That if, when or as, it becomes necessary to give effect to said Order No. 24065 as hereby agreed to be amended, said reduction of $850,000 in its net annual revenues of the plaintiff from its intrastate business and operations shall be deemed to result from its allocation to intrastate business of,

(a) The total amount of any reductions in intrastate tolls, and

(b) 93% of any reductions in Local Service Revenues (Accounts Nos. 500-506, inclusive).

[fols. 121 & 122] 4. That for the purpose of showing the effect of the defendants' Order No. 24065, as hereby agreed to be amended, said reduction of $850,000 shall be deemed to be a reduction of $850,000 per annum in the net revenues of the plaintiff under its existing rates and charges from its intrastate operations and business, for each of the years 1933 and 1934.

Dated this 31st day of March, 1934.

The Public Service Commission of Maryland, Harold E. West, J. Frank Harper, Steuart Purcell. Richard F. Cleveland, Counsel for the P. S. C.

The Chesapeake and Potomac Telephone Company of Baltimore City, by Charles McH. Howard, Raymond S. Williams, R. A. Van Orsdel, T. Baxter Milne, Its Counsel.

[fols. 123-125] In United States District Court

Docket Entry

April 3, 1934.—Certified copy of Order entered on 2nd April, 1934, by the Public Service Commission of Maryland, amending nunc pro tunc their Order No. 24054 of November 23, 1933, filed.

Docket Entry

April 3, 1934.—Assent of Principal and Surety under Bond No. 2202-16-5034-33 to certain amendments in P. S. C. Order No. 24065, filed.

[fol. 126] In United States District Court

Condensed Narrative Statement of Testimony—Filed January 4, 1935

Harry C. Gaertz, a witness of lawful age, was produced by and on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, plaintiff, and testified as follows:

Direct examination:

I reside in Washington, D. C., and am General Auditor for the C. & P. group of Telephone Companies, of which the C. & P. of Baltimore City, which operates in the State of Maryland, is one member. The other three are the C. & P. Telephone Companies which operate respectively in the District of Columbia, the State of Virginia and the State of West Virginia. I have held this position since November 1st, 1930, and have been connected with the Bell system for over thirty years, starting in Philadelphia in 1903 and coming to Baltimore in 1912 when the C. & P. group was set up.

I have been in the Accounting Department during this whole thirty year period. Before 1930 I was for a time Assistant General Auditor, and prior to that Chief Accountant from 1919 until 1929. Prior to that I had held minor positions in the Accounting Department of several Bell companies.

I am familiar with the Uniform System of Accounts prescribed by the Interstate Commerce Commission and, as Chief Accounting Officer, I am required to keep the books [fol. 127] in accordance with that classification involving both interstate and intrastate transactions, and am personally responsible to the Interstate Commerce Commission in this respect. The Interstate Commerce Commission first introduced the Uniform Accounting System on January 1, 1913, which continued in effect until December 31, 1932. This classification of accounts was adopted by the Public Service Commission of Maryland. On January 1, 1933, some minor changes in classifications of account were made. Since 1913 my accounts have always been kept in accordance with the system prescribed by the Interstate Commerce Commission.

It is a part of my duty to review the forecasts of property changes, revenues and expenses of the Company.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-1".)

This exhibit is a comparative Balance Sheet as of December 31st of each year, 1923 to 1932, inclusive. I will introduce separately an exhibit for the year 1933 because of the change in classification of accounts effective January 1, 1933.

Among the significant items on this exhibit is the total fixed capital and progress shown on line 11. This is the Company's property accounted for on the basis of actual cost, amounting on December 31st, 1923, in round figures, to $28,000,000. This is the aggregate actual cost from the day the Company started business, less the retirements of property since then, so that the amount shown is net, re- [fol. 128] sulting from a cumulative monthly and yearly history of the additions and subtractions from the plant since the organization of the Company in 1884. On December 31, 1932, this figure is $49,991,000.

On January 1, 1913, the Interstate Commerce Commission classification came in, and about this time the Public Service Commission of Maryland valued the property of the Company as of June 30, 1914, and at that time the valuation fixed by the Commission for the physical properties not depreciated was approximately $1,000,000 higher than the amount then on the books. Since that time, we have accounted for the cost of property added and made our retirements in accordance with the accounting classification of the Interstate Commerce Commission. When the valuation was made in 1914 at slightly higher than the books, we did not change our books because of that fact, and also did not change the books on December 31, 1923, when a value higher than the book value was found by the District Court. This exhibit faithfully reflects the cost which was incurred over that period of time at prices prevailing when the cost was incurred, so that it is a sort of composite historical cost figure at present.

The first ten lines of this exhibit are simply a subdivision by groups of accounts of these total property accounts. The groupings under each group, the method of specifying the items and of keeping them are part of the system of accounting.

Item 22 on the liability side of the statement is the common capital stock of the Company, which amounted on [fol. 129] December 31, 1923, to $17,174,300, and on December 31, 1932, to $30,000,000. This common stock has always been issued to and purchased by the American Telephone and Telegraph Company, the parent company of the plaintiff, at cash at par. The item of preferred stock on the exhibit is held by the public and is a 7% preferred stock issued in 1923, when $3,000,000 was put out, and it has stood at this figure ever since.

Line 25 of this exhibit, which refers to Advances, is money borrowed from the A. T. & T.; this amounted on December 31, 1923, to $125,000 and increased rather sharply during the next two years to $7,200,000 in 1925. In 1926 additional common stock was issued for cash at par and the proceeds used to pay off these temporary advances, and it has usually been the custom to take up these advances by a stock issue. On December 31, 1932, the advances from system corporations, that is, from the A. T. & T., amounted to $3,675,000. No bonded debt has ever been issued by this Company.

Line 31 shows the total Fixed Capital Reserves, which are the depreciation reserves of the Company, amounting on December 31, 1923 to $6,439,000, and at the end of 1932 to $10,229,000. The Interstate Commerce Commission requires that we determine average annual rates for depreciation based on estimated service lives of the property and the estimated salvage that is expected at the time of retirement. These depreciation rates are adjusted from time to time in accordance with the experience of the Company. Those rates are applied to the amounts of property shown on the books and credited to this depreciation re- [fol. 130] serve. Retirements are made out of fixed capital accounts at original cost, estimated if not known, and charged against this depreciation reserve. The balance at the end of any period represents the unused portion of the reserve at that time.

I will illustrate by a simple concrete example. In the case of a unit such as poles, we maintain currently in our books a record of the number of units of the different items included in each account; we show the number of the different kinds of poles by sizes. The cost of a pole as shown on the books includes the cost of placing it, so that it is the value of the pole in place rather than just the material value. There are other units in that account; we take the total units of property as of the beginning of each year and apply test unit costs which are adjusted so that when applied to the quantities in service the result will equal the total book cost. That gives us an average cost for each pole of a given size as distinguished from the actual cost. The cost of trying to record the price of each individual pole would be prohibitive, but the cost on the whole is reflected and in the end works out the same way. When a pole is retired during the year, we place on our books

a journal entry which takes that pole out of the fixed capital accounts at the average cost previously referred to and charges it against the depreciation reserve. All during the life of that pole we have been accumulating in the depreciation reserve toward its ultimate retirement. The bookkeeping entries, therefore, would show, assuming the average price of a pole was X dollars, that we subtracted X dollars from the capital account and also subtracted X dollars from the depreciation reserve. The ratio of the [fol. 131] depreciation reserve to the total cost of the property on December 31, 1933, was 22.97%, which will be shown by another exhibit.

The increase in fixed capital from $28,000,000 in 1923 to $50,000,000 in 1932 is accounted for by the increase in the stock of the Company, the borrowing from the A. T. & T. shown on line 25, the bills payable on line 26, and the depreciation reserve and surplus of the Company. Roughly, the increase from the beginning to the end of the period shows $13,000,000 for stock, $5,000,000 for notes, about $4,000,000 for fixed capital reserves, and $1,500,000 for surplus. This is roughly twenty-two or twenty-three millions, representing the increase in fixed capital from twenty-eight million to fifty million. It is fair to say that the reinvestment of the depreciation reserve accounts for a portion of the increase of value of the Company's property, or for the difference between the new money and the total money that has gone into it. Our depreciation reserve is temporarily invested in property until such time as it is needed for the retirement of property. The ratio of the depreciation reserve to the total property goes along fairly consistently, although it may be a little higher or a little lower than the preceding year.

(Thereupon there was offered in evidence by the Plaintiff an exhibit marked "Plaintiff's Exhibit No. A-2".)

In explanation of this exhibit, it will be recalled that the total assets and total liabilities on the last column of Exhibit A-1 amounted to slightly over $52,000,000. I have [fol. 132] taken those amounts and shown them in the first column of Exhibit A-2, and then have shown in the second column the same items classified under the new accounting classification; in order to show a comparison between the two, it was necessary for me to regroup some of the fixed

capital items, but there is no change in the total. The new accounting classification was due to a revision put out by the Interstate Commerce Commission, effective January 1, 1933.

As one example of this change, I will mention Item 14, which is Interest during Construction. Prior to 1933 we were required to keep the amounts in that account separately, but in the new classification were required to break it down and separate it over the primary property accounts, so that we no longer have any such separate item but we distribute it among the property items. There are other changes, such as line 8, Drop Wires, which was formerly a part of the Aerial Wire Account, Outside Plant Account, which is now merged with the Station Equipment Account.

The item in line 14, Interest during Construction, represents interest calculated at 6% and applied to the amounts of money being spent for construction prior to the time that construction goes into service, so that it is difficult to trace the item of Interest during Construction to any interest bill actually paid.

Because of our favorable relations with the A. T. & T., we do not have to finance money for long terms in ad- [fol. 133] vance. If we have a construction program calling for a certain number of million dollars for a year, we do not have to finance that money the beginning of the year, but we get it on call overnight. We pay interest on the money we borrow. Some of the money we get has come from stock and some from notes which bear interest. The rate on temporary borrowings from the A. T. & T. is 6%, less a 2% cash discount if paid monthly, which averages 5.88%. We think 6% is a conservative figure to set up for the Interest during Construction; this rate is applied to actual expenditures and has the practical effect of being a real charge to fixed capital and a concurrent credit to the income accounts.

Under the new Interstate Commerce Commission classification, if we are constructing a building requiring six months to complete, the interest during construction that we figure on the expenditures accumulated each month during that period would be treated as part of the building, rather than separated in a special account. Land and Buildings have increased from $3,543,000 to over $3,700,000,

which is due chiefly to the inclusion in that account of interest during construction, formerly in a separate account.

The 1933 balance sheet includes not only the new interest during construction but the old interest already on the books distributed among the other accounts. We had never taken up any interest during construction before 1918. We started at that time. Any projects requiring less than two months to complete are charged directly to the property accounts without going into the account for con- [fol. 134] struction work in progress, so that they do not carry any interest during construction. When we started such an account in 1918, we did not go back and put on the books the interest during construction back of that date.

Referring to Exhibit A-2, I will point out that the total fixed capital and progress on line 18 made very little net change during the year 1933; it is now slightly over $50,000,000 and for 1932 was just under $50,000,000. There has been no change in the common or preferred stock. Advances have been reduced from $3,675,000 to $2,650,000, but the bills payable have increased from $1,164,000 to $1,305,000. There has also been a further increase in the fixed capital reserves and a decrease in the amount of surplus.

I have also prepared a statement or analysis showing the additions to and retirements from fixed capital during the ten years of 1923 through 1932.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-3".)

This Exhibit A-3 is mainly put in for reference. It details by individual property accounts the gross additions subdivided between new plant construction, plant purchases and service wires reused, and the plant retired from service subdivided between retirements, plant sold, and service wires abandoned. It shows also the net additions and the balance at the beginning and end of the period. The first sheet is a summary of all the ins and outs of property for the nine year period 1924 to 1932. The next nine [fol. 135] sheets show the amounts separately for each one of these nine years, and the last two sheets, 11 and 12, show the year 1933 under the accounting actually required by the Interstate Commerce Commission and then reclassified to

the accounting in effect prior to January 1, 1933. This lengthy exhibit gives the detailed figures of the cost of what was acquired each year, the cost of what went out of service each year, and the net balance on a cost basis at the end of each year.

The first page of the exhibit shows for the nine year period 1924 to 1932, total gross additions, which is the figure in the fourth column for the last item, $42,808,000. The total plant sold, removed or abandoned, was $20,819,000, giving net additions during the period of $21,988,000. We started the period with $28,003,000, and during that period there was a turn-over to the extent of twenty million dollars, which indicates a fairly fast turn-over, but it is important to note that some of the accounts turned over faster than some of the other accounts. Land would be one illustration of a slow turn-over. Station Apparatus, Account 231, is an account which turns over very rapidly; this includes the telephones and bell boxes on the premises of the subscribers. In this account we had $1,874,000 at the beginning of the period and actually retired $4,923,000 during the period. This is shown on Account 231 of Exhibit A-3. Conduit, Account 244, is another account that is slow in turning over. On the whole the turn-over is quite rapid, and the general average of our property changes over a rather short period of years compared with some more permanent types of property. The quicker the turn-over, [fol. 136] the closer the books on a cost basis approximate current costs. If we struck a stable period the books on a cost basis would naturally approach current costs because the retirements are made according to their original cost and there is a stabilizing influence in that.

The next exhibit which I will introduce shows an analysis of the charges and credits to the fixed capital reserves, which are our depreciation reserve.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-4".)

This Exhibit A-4 shows the history of our depreciation reserve from January 1, 1924 to December 31, 1933. The figures on line 1 will check with the figures on the balance sheets, Exhibits A-1 and A-2. The actual charges against the reserve are shown under the caption, "Realized Depreciation" which is the cost of plant retired from service,

cost of removal, of extraordinary or casualty repairs, and a deduction for salvage realized at the time of retirement. When there is an increase in the depreciation reserve such as appears from this exhibit, the first thing to do is to check the reserve against the property, and express the reserve as a ratio to the plant in service and general equipment. On January 1, 1924, at the time of the previous case before the District Court, the ratio of reserves to total property was 23.29%. This dropped in subsequent years to a little less than 21%, then to a little less than 20%, then a little less than 19%, then went up to 19%, and to 20%, then back a [fol. 137] little, and at the end of 1933 was 22.97%.

Under the depreciation rules of the Interstate Commerce Commission, which grew out of Case No. 14700, we are required by the end of 1934 to determine what the reserve requirements are and put that in comparison with what the reserve shows on the books; this is something that we will now be required to do for the first time at the end of 1934, and will be a determination of what our actual reserve requirements should be, or, in other words, an adjustment of theory to actual experience. We have never had to test the reserve requirement against the balance in the reserve. We have been concerned with putting in what we felt was the proper annual amount for each year as a credit to the depreciation reserve, but have not been concerned with whether the accumulation at the end of the year might be higher than the reserve requirement at the time. We do not disregard experience but check it with our judgment as to what is going to happen in the future life of the plant in determining the annual rates for credits to the reserve. No authority heretofore has required us to do what the Interstate Commerce Commission is now requiring. Heretofore we have ascertained that the amount was correct that went into the annual expense of depreciation. We satisfied ourselves as to the correctness of the annual amount by determining the estimated service lives and the salvage for each one of the property accounts. Conditions change, and we might find that we had been working on a basis of a service life for a certain property of fifteen years and the property might actually last only [fol. 138] ten years; or in view of the depression and lengthening of its service life that property can last twenty or twenty-five years. Now as service lives do change, there

would be some adjustment required in the accumulated balance up to the time of that change; but they increase at times and decrease at other times. We have never made such an adjustment on our books, but we do adjust our annual rates of depreciation from time to time. Line 18 of Exhibit A-4 shows how those rates will fluctuate during the period.

We make a determination in order to put in what we consider the right amount, but do not bother further as to whether the amount in the reserve was too great or too little. The reason for this is because the reserve requirements would be changed from time to time; the only adjustment that could be made, it seems to me, would be as between the depreciation reserve account and the surplus account; and both of them have practically the same function, that is, one company not tied down to a rigid system of accounting like that prescribed by the Interstate Commerce Commission, may have a large depreciation reserve and a small surplus, and another company, also not tied down by such rigid requirements, may have a small depreciation reserve and a large surplus. It seems to me that adjustments year by year would just be between the depreciation reserve and the surplus account, and it certainly would not affect the current expense of depreciation for that year in which you made the adjustment. If the depreciation allowance is high enough, it does not make any difference to the company whether it is carried in the [fol. 139] reserve or in the surplus. If the allowance was too low and if the reserve was not there, either in the form of surplus or in the reserve itself, it would be a matter of serious concern to the Company, and I can even visualize, if the reserve allowance had not been high enough, that you might pay dividends out of capital. The management feels at the present time that the ratio of depreciation reserve to plant is reasonable and that no substantial adjustment is required.

While the Interstate Commerce Commission is requiring us to determine our reserve requirements, there is no indication so far what that Commission is going to do about it after they find what the reserve requirements are.

In estimating our depreciation allowance for the future, we take experience into consideration, to this extent, that we want to make the allowance as it goes on from time

to time sufficient, but under the Interstate Commerce Commission rulings if we have failed to set up a sufficient depreciation allowance in the past, we cannot go back and build up the reserve by making a larger allowance than the actual current experience indicates. That is why I spoke of the surplus as being the account out of which adjustments would have to be made. Therefore, whether we have allowed too much or too little depreciation in the past is something that we cannot now adjust, except to the extent of seeing that it does not grow one way or the other too much in the future. We cannot make up any deficit or check back any excess through the current accruals.

[fol. 140] We never change our books on the basis of values found in the testing of rates. Our books are required to be kept on a cost basis and will continue on a cost basis, and the depreciation allowances are figured on a cost basis as required by the Interstate Commerce Commission, and they will not permit us to keep our books on the depreciation allowance on any other basis.

Referring to Exhibit A-4, line 18, the annual rate of depreciation expense has run slightly over 5%, fairly consistently from 1924 through 1932, which is a per cent. figure on the cost of the whole property. The depreciation schedule is of course based on rates for each individual property account, but this is a composite figure. We introduced two changes in 1933 in the rate of depreciation expense, one at the first of the year and one on April 1, 1933; the composite of those two schedules, one for three months and one for nine months was 4.45%. The composite annual rate, if the April 1, 1933, schedule had been in effect during the full year, would have been 4.38%, shown in the note on the exhibit. I think it would follow that the comparative uniformity of the percentage of depreciation reserve to total property shown on line 15 is indicative of the general correctness of $10,000,000 accrued depreciation in 1933 as compared with $6,000,000 in 1924.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-5".)

[fol. 141] This exhibit is fairly self-explanatory, and contains statistics showing the general growth, the figures being taken from the books of the Company. I might call attention to the fact that the increase in gross revenues for

1925 came in part from the rate increase following the Commission case, which in turn followed the last Court case in this Court, and an additional part came from growth. Those total telephone revenues got up to the high point of $14,000,000 in 1931, and were down about $1,000,000 in 1932. Expenses had gone up to a little over $11,000,000 and had been reduced somewhat, to $10,500,000 for 1932. Now the average plant in service, shown in Item 20 on Exhibit A-5, is not taken as a precise base for calculating that return, but will give an indication of the trend of that return. The year 1924 was 4.71%, which was before we obtained the increase in rates from the Commission. In no year was the return more than 7% nor less than 6% until 1932, when it was 5.78%.

The station statistics show that we have had a steady growth from 1924 through 1931, but we lost 13,000 stations in the year 1932. The total stations increased from approximately 160,000 on January 1, 1924, to over 208,000 on December 31, 1932. The inward stations are those connected during the period, and the outward stations are those disconnected. Every phone is a station. At the end of 1933 we had a total of 199,127 stations in service in the State of Maryland. The statistics are of the total operations of the Company, both interstate and intrastate operations. A stipulation has been filed that 15% of the property and net revenues are interstate and 85% intrastate.

[fol. 142] I have another exhibit similar to A-5 which covers the year 1933.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-6.")

This Exhibit A-6 shows a further reduction in revenues from 1932 to 1933, a reduction in expense but not to the same amount as the reduction in revenues, and a falling off in the net revenues from $2,836,000 to $2,527,000, and it is out of this latter figure that the net cut of $1,000,000, that the Commission thinks ought to be made, must come. That is a cut of 40%.

We lost 9,000 stations during 1933, and that makes a loss of 22,000 stations in two years; the low point was at the end of August, 1933; September and October both showed gains; November about broke even, and December showed

a net loss of just a few stations. There has been a gain of approximately 500 stations in two months of 1934. The gain is still keeping on at a slight rate, but there is nothing startling about it. We hoped it would come back much faster. Normally our summer months are very low and often reflect a loss, so that we might assume that the improvement took place some time before August, even though we lost stations during the month of August, but some time last summer things began to improve.

Station losses come both from loss of customers and lost instruments in customers' installations. We find people give up the telephone because they say they cannot pay for [fol. 143] it—they cannot pay any rate for the telephone unless we give it to them for nothing. Another reason is that people have curtailed the number of telephones they have. Business houses have reduced the number of stations connected to their private exchange systems, or individual subscribers have disconnected extension stations. We have had different experiences from different customers, and I am not able to say which cause is proportionately greater in the loss of stations.

The star opposite the year 1933 refers to a footnote and two adjustments to those book figures for the year 1933. The first placed the expense of depreciation on the basis of the rates in effect after March 31 of that year referred to previously in connection with the depreciation reserve exhibit. The second took out the actual expenditure incurred by the company in connection with the rate case before the Commission last year and some expenses in connection with this Court case in December 1933 and substituted an amortization figure as the portion of that expense we think we are entitled to take annually until those expenses are taken care of.

In line 17 of Exhibit A-6 it shows that the operating taxes have gone up $120,000 in 1933 over 1932, due chiefly to a change in the basis for figuring the State Capital Stock Tax.

(Thereupon there was offered in evidence by the plaintiff, exhibits marked "Plaintiff's Exhibits A-7 and A-8, A-7 being printed pamphlet of the Uniform System of Accounts ordered by the Interstate Commerce Commission in 1913, and A-8 being the revision ordered in 1933.)

[fol. 144] These are the accounting regulations of the Interstate Commerce Commission which the Maryland Commission has adopted, except that it made a reservation as to jurisdiction as to depreciation expense.

Cross-examination:

The Telephone Company is a Maryland corporation incorporated in the early '80s and all of its common stock has always been held by the American Telephone and Telegraph Company or an affiliated company. The entire outstanding common stock of $30,000,000 is held by the A. T. & T. The Chesapeake and Potomac Telephone Company of Baltimore City is by far the largest telephone company in the State of Maryland, and practically all of the telephone service in the State of Maryland is done by it.

Our properties were completely valued by the Public Service Commission as of June 30, 1914, when the Company was about thirty years old. For one year and a half prior to that time we had been keeping our accounts in accordance with the Interstate Commerce Commission's uniform classification, and continuously since that time we have observed the requirements of the Public Service Commission with regard to this Uniform System of Accounts which had been adopted.

The Public Service Commission valued our property as of June 30, 1914, in 1916 in Case No. 690, and again in 1920 in Case No. 1709, and then there was a complete valuation of our properties by the Statutory District Court in the Whitman case, decided in 1925, fixing a value of $29,507,950 [fol. 145] as of December 31, 1923.

We have had three general increases in rates since public utility regulation, but the Company did not increase its rates following the 1914 Commission case, although the findings of the Commission indicated that the actual return on the fair value of the properties was less than what the Commission said would be an allowable return. We have not had any general decrease in rates; we have made decreases in rates from time to time, but have not been required by public regulation at any time to make any decrease, though on all rate reductions we put in we had the approval of the Maryland Commission. But we do not

necessarily wait to have the Commission force us to make a reduction.

The flat residance rate for unlimited service I believe was $4.00 in 1914 and at present is $6.00; that is one rate that is 50% higher, but you will recall the number of stations we had at that time to which the subscriber could talk and the number today is very much greater, so that while it has the appearance of a 50% increase, the amount of business done for the flat rate is considerably more than it was before. I would make a rough approximation that the percentage of general increase in rates, without having referred to studies, is between 20% and 25%. That will not take into consideration the more valuable service that we are giving now, as compared with what de did before the War.

[fol. 146] We have been and are now financed by the A. T. & T. Company, which makes advances to us from time to time as we require the money, and always meets our requests promptly and fully. Referring to Exhibit A-1, the largest amount we have borrowed from the A. T. & T. at any time during the period 1924 to 1933, shows $7,200,000 as of December 31, 1925.

The agreement with the A. T. & T. does not provide that they will continue to finance us, but that they will aid us in financing. Whether the financing will be forthcoming from the A. T. & T. Company when we need it all depends on the management of the Company. The Board of Directors are going to have something to say about future financing, and if they decide it is proper to continue with temporary loans from the A. T. & T., that is the way it will be done; if they decide to go in the market and put out a bond issue, that may be the way. I cannot say now in advance what the Board of Directors are going to do. I could not answer whether there is anything which would prevent us from obtaining as much financing as we will need in the future from the A. T. & T.

The outstanding $3,000,000 preferred stock, which is held by the public and on which a dividend of 7% is paid, was very much oversubscribed when it was issued. It is callable at 110, and I think has sold somewhere between 115 and 120; none of the original issue has ever been called and the $3,000,000 is still outstanding. On the common stock, [fol. 147] my recollection is that the dividend rate in 1924

was 6%, and from 1925 through 1932 it was 8%, and for 1933 it was reduced to 7%. The surplus account increased from $1,044,591 in 1923 to $2,243,840 in 1933, as shown on Exhibits A-1 and A-2. Figuring on the surplus itself, this is an increase of a little over 100%, but it would be much more interesting to compare the surplus to the stock at each one of those periods and see how much surplus there is actually to the credit of the Company. This was about 6% in 1923 and this year is less than 8%.

The advances from system corporations noted on the exhibit are from the A. T. & T., line 26, Bills Payable, on Exhibit A-1, and line 37 of Exhibit A-2, which totals $1,305,000 at the end of 1933, are moneys which we borrowed from the Bankers Trust Company as Trustee of the Company's Pension Fund, which is represented by notes held by the Trustee. This money is invested generally in the Company's property and is not held separate in any way; this money bears interest at 4%. There are some conditions which I think have a bearing on this interest rate. Under the terms of the Trust Agreement, the Company may direct the Trustee to invest the Company's Pension Fund in any bonds or notes whether secured or unsecured, of the Company or of any associated company of the Bell system. Under this provision the Company has directed the Trustee to invest the trust funds in 4% notes of the Company. These notes carry waivers from the A. T. & T., giving the Pension Fund notes precedence over the notes of the Company held by the A. T. & T. Until about two years ago we [fol. 148] had paid 5.5% on those notes. The pension accruals had been determined on the basis of actuarial studies using 4% interest rates, and when we first established this fund there was a deficit in the amount of money in the hands of the trustee, and the Company chose at that time to pay 5.5% interest with the idea of wiping out that deficit. That never had anything to do with the operating expenses of the Company, but it increased the amount of interest the Company was paying out. When the earnings of the Company started falling off in 1932, those notes were withdrawn and 4% notes substituted. The rate of 4% for the Pension Fund notes and the rate of 5.88% which I previously mentioned, on which we borrowed from the A. T. & T., represents at the present time, and under the conditions as I have outlined them, the cost of all our borrowed money.

Referring to Exhibit A-2 as of December 31, 1933, the properties which we acquired but which we no longer need for telephone purposes, are not put in the fixed capital accounts, but are carried as miscellaneous investment. The lot at Bethesda, Maryland, and a house and lot on 31st Street in Baltimore, appear in the miscellaneous investment and do not appear in the fixed capital account, but the fixed capital account includes the total cost of all other plant of every kind, nature and description owned by the Company; all of the property is included whether it is being physically used for telephone service or not, and whether it is being used to its total capacity in telephone service or not, with the exception of the two parcels (of real estate) already mentioned, which are considered as non-used. The [fol. 149] property at St. Paul and Pleasant Streets in Baltimore was acquired in 1923 with the intention of using it in the future for a telephone building to house primarily central office equipment and possibly offices, and that is still the intention of the Company, and we still account for it the same now as we did then; we have made some temporary use for it. We have to acquire properties long ahead of the time we need them because we have to locate our central office (or telephone exchange) at the approximate wire center of the area to be served. If we wait until we absolutely have to have it, the lot may have been improved, and then we would have to pay for the improvements as well as the lot. There are no other pieces of property which would come within the same general description.

Once property has been devoted to service, it remains in the accounts unless we determined that we are no longer going to need it, in which case it is taken out of the fixed capital accounts and put into the account Miscellaneous Investments. Our test for excluding property from the capital accounts and putting it into the miscellaneous investment accounts is our conviction that it will never be used, and we would keep it in the capital accounts and offer it as a part of our rate base, even though we were convinced it would not be used within the reasonably near future.

In building a telephone property, you do not build for the exact need at the time; there is always some margin put in for growth and a margin for maintenance; we have spare plant and always try to maintain it, which is a sort of [fol. 150] standby plant for future requirements. Some

of what is now spare plant was actually in use in prior times. It is the general policy of the Company to maintain a margin of plant. If the requirements of our business diminish, the spare plant and the spare margin will increase, and if there is a general falling off in business, one would expect an increase of this spare and margin plant as long as the business is decreasing. Just as soon as that condition turns, the reverse is true.

As to whether in 1929 we had built a plant adequate for all stations we had then, and had also an adequate allowance of spare plant and margin plant, I assume that we did. There may be isolated cases where the growth came so fast that we did not have enough plant there and were in the process of putting in plant at that time.

The Company tries always to be ready and able to serve all the stations that we have and generally to have spare plant and margin plant. When business was declining there may have been some types of plant which were not at that time necessary, as for instance the station on premises of subscriber who had terminated his service. But in the case of a circuit from one central office to another or a toll circuit, that carry fewer messages, we would still have to have that circuit although it may not be used as often as before.

Referring to the Comparative Balance Sheet at the end of 1933, we had, in round figures, $50,000,000 fixed capital [fol. 151] with which to serve 199,127 stations, and to serve approximately the same number of stations in 1929 it would be, in round figures, $44,000,000, but do not let us get the impression that this plant would serve the same stations. We find ourselves in this position, that we are losing stations in one section and gaining stations in another. We are certainly serving large numbers of stations today that we did not serve back in those times, and these stations require additional plant. There is a relationship between the number of stations and the amount of plant in service that is necessary, but it is not a precise relation. Some portion of the difference between the plant cost figures mentioned represents plant which we now have but which is not used to its full capacity by reason of losses in customers. As to whether this margin will increase, our recent experience is that we have been gaining in stations, so that we are gradually wiping that out, but I do not know what the future has in store. There are indications now that

there is property which we own which is partly in disuse, all mixed up with the other property.

The valuation found by the Commission in 1914 was higher than the cost, and the same thing is true of the valuation found by the Statutory Court in 1925, speaking in both cases of the undepreciated amount compared to the book cost. The undepreciated value that was found by this Court in 1923 was $36,122,912. That included the physical property, other assets which might be termed working capital, and the allowance that was made for going value. Now in breaking that $36,000,000 down we have $33,644,852, as compared to the undepreciated physical property as shown [fol. 152] on the books of $28,003,479 and that is an increase of $5,641,373, or 20%.

Referring to Exhibit A-2, the total cost figures include in the item of intangible capital something over $6,000 for organization franchises, etc., and something over $26,000 for undistributed costs of property. The organization franchises, etc., were some expenditures such as taxes paid, in connection with the recent issues of stock. The undistributed cost of property is the difference between what we paid for properties acquired and the structural value of those properties, when we purchased some independent telephone companies. The total cost figures include the items mentioned as apportioned to the various property accounts to the extent to which they have been incurred. The item of interest during construction of something over $337,000 represents total interest during construction from 1918 on, in connection with the construction program under which the Company actually constructed its plant. It is also true that these figures include everything that the Company has paid out and capitalized for going concern value, to the extent that all of our expenditures that have been charged to capital are reflected on the books.

In the 1914 case the Commission in its opinion (Case 690) stated that it would permit us to adjust our depreciation expense allowance for the future in order to build up a reserve of approximately 20%. As I recall, our composite depreciation rate at that time was 6¼%, and the Commis- [fol. 153] sion said they felt that was a little high, but inasmuch as the deduction which they had made in arriving at value amounted to more than was accrued on our books, they did not see fit to use a lesser expense of de-

preciation at that time. It might be said that the future rate payers were to be charged an additional amount in the form of depreciation expense in order to make up an inadequate reserve or it could be said that at that time the stockholders were making it up because the opinion of the Commission clearly shows that we were not earning the 8% which they said we should be entitled to earn:

Redirect examination:

With reference to what was called plant margin, we must have not only plant enough to supply every subscriber, but as changes are being made by the Company we have to have the plant to utilize in making those charges. We need the margin for maintenance whether the Company is growing or not. The Company makes no distinction between plant margin for growth, or what has been described as spare or standby plant, and plant margin for maintenance, or what has been described as margin plant. The two kinds of plant margin are considered together and there is not much point in trying to make a distribution between the two.

[fol. 154] FRANK H. FRAINIE, a witness of lawful age, was produced by and on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, plaintiff, and testified as follows:

Direct examination:

(Reference was made by Counsel for the Telephone Company to the Stipulation dated March 15, 1934, and filed March 16, 1934, relating to the reproduction cost of certain buildings, and it was explained that Plaintiff's Exhibits A-9 and A-10 later introduced by Witness Frainie included the reproduction cost of all the Telephone Company's buildings, the buildings covered by the Stipulation being included at the amounts shown in the Stipulation.)

I am in my 59th year and reside at Baltimore, Maryland, I am senior partner in the firm of Frainie Brothers, Contractors and Builders. I have been engaged in the construction and building business for the past 42 years, having entered the employ of Edward Brady & Sons, Build-

ers, at the age of 17 as an apprentice. I became a member of the firm of Edward Brady & Sons in 1909 and continued their business under the name of Frainie Brothers and Haigley from 1917 to 1930, and since that date under the present name of Frainie Brothers.

In the past 30 years my firm has constructed buildings of all descriptions, including churches, hospitals, schools, apartment houses, office buildings, marine piers, and tele- [fol. 155] phone buildings. In some of the cases I have supervised the actual construction of the project after the contract was awarded to us.

During my entire connection with the building industry it has been necessary for me to spend considerable time in estimating the cost of building construction. Estimating the cost of building construction is a most important part of our business, as our bids for projects for which we are seeking the contract are based on the estimates which we make. For the purpose of making such estimates, it is necessary for my organization and myself to keep in constant touch with the current costs. I have always supervised the estimating of our office and, as senior partner, the accuracy of these estimates has been my responsibility.

The following is a partial list of the buildings constructed by our firm in the past 30 years:

Union Memorial Hospital, Hospital for the Women of Maryland, Bon Secour Hospital, Jenkins Memorial Hospital, St. Benedict's Church, St. Catherine's Church, Baltimore Sun Building, the Merchants and Miners office building, storehouse and piers; Gilman Hall and Dormitory, Johns Hopkins University, Gilman Country School for Boys, grand stand and buildings at Laurel Race Track, buildings for the Fair of the Iron Horse, Halethorpe, engine houses and shop facilities for the B. & O. R. R. Co. at Brunswick, Cumberland, and Baltimore, Maryland; Grafton, Keyser, and Fairmont, West Virginia; Gary, Indiana; Smithfield, Pennsylvania; Washington, D. C.; and Elsmere Junction, Delaware; B. & O. R. R. Co. Piers 3, 5, [fol. 156] 6, 7, 8 and 9, Locust Point; remodeling passenger stations at Pittsburgh and Camden Station, Baltimore; new construction and additions to existing buildings of the Telephone Company at 5 Light Street, Liberty, Wolfe, University, Dundalk, Arbutus and Gilmor Exchanges; plant of the Procter Gamble Co., business buildings for Hutzler Brothers, Julius Gutman & Company, and Hecht

Brothers; barracks and guard house for U. S. Government at Aberdeen Proving Grounds.

In the past 50 years our firm has executed more than $60,000,000 of building construction work of all kinds and descriptions.

In preparing the reproduction cost study as of December 31, 1932, Mr. Charles A. Cummins and Mr. William F. Chew, who has since died, acted with me. Mr. Chew testified in this case before the Commission. We were asked to appraise the reproduction cost new of all the Telephone Company's buildings in the State of Maryland and to ascertain the actual existing depreciation on those buildings. An exhibit has been prepared showing those facts.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-9".)

We made the estimate of reproduction cost of these buildings in the City of Baltimore, in the vicinity of Baltimore, in the vicinity of Washington, and several buildings which we call "Buildings in Central Maryland" ourselves personally and by our organizations acting under our direction. [fol. 157] The buildings in Central Maryland, which form a small proportion, are about $30,000.

In the buildings on the Eastern Shore we had Messrs. Parsons and Humes, who were a builder and architect respectively, appraise the buildings at Salisbury, and in Western Maryland we had Mr. J. D. Ferguson, an engineer and builder of Hagerstown, appraise the buildings in Western Maryland. We did not appraise the building at 214 E. 31st Street in Baltimore, which is a dwelling house adjoining the University Exchange, neither did we appraise the building or property at St. Paul and Pleasant Streets. As to the estimates received from the men on the Eastern Shore and the Western Shore in 1932, we included them in our appraisal at the prices given by the local appraisers and we considered them reasonable.

Our method of estimating reproduction cost new of the Telephone Company's buildings was as follows. The Telephone Company furnished us wherever possible with drawings and specifications of the buildings which had been erected for the Telephone Company's use. Where the Telephone Company did not have drawings, we had the buildings measured and had drawing made. In every case we

checked the drawings against the building and noted any changes, alterations, additions or removals. To the quantity survey made up in this way we applied unit prices covering the respective units that applied to the practical elements of the building. The result would be to give us, in [fol. 158] our opinion, what would be the lowest cost that the Telephone Company could employ a contractor to reproduce those buildings. Our method was the same that we would use in competitive bidding.

Unit costs are developed in, I might say, two major ways: In the case of work which is performed by our own employees, the men on our own payroll, on every building we erect we keep an accurate daily cost sheet, showing exactly what work was done on that particular day and the amount of labor and material necessary to produce that work. These daily reports are tabulated and reduced down to the unit applicable to the work, whether it is a square foot, cubic foot, square yard or cubic yard, per thousand, per lineal foot, as the case might be. We use those experiences in estimating on future work to arrive at a unit cost to allow for work that we are figuring on in competition. We can judge the efficiency of these unit costs by comparing them with the unit costs of another job. In the case of work that is sub-contracted and not done by our direct employees, we make a practice of breaking down certain buildings to reduce them to those respective units, and knowing the exact cost of that particular element of the building, we develop a unit. This is necessary, because we must know in estimating on work for which we expect to contract, if successful in getting it, whether an estimate received by us is correct or not. If it is too low and we think we could not buy it for that, could not contract for it, we discard it. If it is [fol. 159] too high, we make our own estimate. From time to time we discuss these prices with people who do this sort of work and keep in overall touch with all building costs.

We applied the unit costs so developed to the quantities, but treated each individual building on its own appraisement.

(When the witness was proceeding to explain the application of his unit costs to a particular building, counsel for the Telephone Company, in answer to the Court, explained the method employed by the building appraisal witnesses, namely, the method of breaking the building down into

various component parts, developing, from their experience, unit costs for each component part, and applying such costs to the particular component part. Counsel for the Commission stated that the parties were not in dispute as to the method used in obtaining the reconstruction cost new.)

Counsel for the Telephone Company further stated that the Company was prepared to put the full details before the Court whereupon the following occurred:

Judge Coleman: Has there been or could there be any dispute as to the standard methods employed by this witness?

Mr. Moser (counsel for the Commission): No, the dispute is as to the method used as applying to the figures.

[fol. 160] Judge Coleman: I do not see any sense of going into it.

Judge Soper: Supposing you pass it and if cross-examination develops the necessity of going back to it, you will be given the opportunity.

The witness continued:

We have only added architect's fees to those buildings which in our opinion would require the services of an architect.

Our Committee also estimated the actual existing depreciation as of December 31, 1932 in these buildings, and Exhibit A-9, which has been filed, represents the general opinion of the Committee. At the request of the Company we have brought that study up to date. We used the same methods which I have already described and recomputed our unit costs for the buildings in Baltimore City. We took the same quantities that we had surveyed and checked, as in 1932. This was done for all the buildings in Baltimore City, the three near Washington and those adjacent to Baltimore City. The unit costs were not recomputed in Central Maryland, and the latter are in the 1933 appraisal at the 1932 cost. We have not included in these studies any costs other than construction costs and architect's fees. The undistributed construction costs of the Telephone Company have not been included.

I have another exhibit which represents the reproduction costs new and reproduction cost less depreciation as of December 31, 1933, of the buildings.

[fol. 161] (Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-10.")

The increase in reproduction cost is due to increased prices of building, there being no additional buildings to value.

Cross-examination:

As existing depreciation, we took the physical depreciation that we could observe and the physical depreciation that was indicated, all that we could observe, and also any inherent depreciation, whether we could find it or not. We did not find any evidence of obsolescence. If we had we would have taken it into consideration. We did not find any inadequacy in these buildings; they are all well built and well maintained. We were appraising these buildings as builders and not as telephone engineers. If we had known that the Telephone Company was going to scrap any one of these buildings in a period of five years because they felt the need of a more modern site or a more modern building, we would not, in this case, have depreciated anything in the value. We were asked to make a spot appraisal of these buildings as of December 31, 1932 and 1933. We did not consider the time these buildings had been built in reaching our depreciation figure, except where the age was reflected in the condition of any element in the building. We did not know when we observed them when any of these [fol. 162] particular buildings had been built, so that any age we took into consideration would be that which we could observe by looking at the different parts of the building. The result could not be fixed with reference to the age of the telephone buildings because they have been changed and altered. We took the buildings exactly as they were in their present condition.

The one item of 10% allowed for builders' commissions or margin of profit was taken as standard throughout.

What I have called inherent depreciation is any depreciation which is always taking place and inherent in the property itself. As to whether I could judge from the condition of paper on a wall about how much of the plaster had gone bad, we went into it a little more closely than that. We examined the plaster as near as we could through

the paper. We used a penknife to arrive at the condition of the plaster, and then put a per cent. condition on the plastering, and in cases where we found it could be repaired for a certain amount of money it was finally reduced to a percentage, the final percentage of depreciation varying in the different buildings.

[fol. 168] CHARLES A. CUMMINS, a witness of lawful age, was produced by and on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, plaintiff, and testified as follows:

Direct examination:

I am 51 years of age and live in Baltimore. I am Vice-President and General Manager of the Consolidated Engineering Company.

(Counsel for the Commission stated that the qualifications of this witness were admitted.)

After eight years of public school education and two years in the Baltimore City College, I entered St. John's College, Annapolis, Maryland, where I graduated in 1903 with a B. S. degree, having specialized in Mechanical Engineering, surveying and higher mathematics. During the time I was at St. John's I spent my holiday periods as a clerk and draftsman in the Baltimore Bolt and Iron Works. After graduation I taught at McDonogh School for about nine months and then returned to the Baltimore Bolt and Iron Works.

In May, 1904, I started working for Charles L. Stockhausen, Contractor and Builder, as an estimator. For a short time I went with the Chesapeake Iron Works as a structural draftsman and estimator, but returned to Stockhausen in the position of General Estimator. In all I was [fol. 164] with Stockhausen for seven years in the several capacities of Estimator, General Estimator, General Superintendent and General Manager. In June, 1911, in conjunction with Mr. George P. Zouck, I organized the Consolidated Engineering Company and since its inception have been its Vice-President and General Manager.

As General Manager of the Consolidated Engineering Company I have been responsible for the preparation of estimates of the cost of construction based on plans and specifications, for the purpose of making bids and obtaining contracts. Some of this work has been done under my supervision, and some of it has been done by myself personally. In addition to this type of work, I have also been responsible for the carrying out of the work in construction, and in the case of some of the larger jobs, such as the Department of Commerce Building in Washington, D. C., I personally supervised the construction. In the 22 years of its existence our Company has executed more than $100,000,000 of construction work, consisting of monumental buildings, office buildings, hotels, apartment houses, telephone buildings, factory buildings, and in fact buildings of all description, our latest monumental type of buildings being the Department of Commerce Building in Washington. During the year 1933 we had under construction the House Office Building, Washington, D. C.; Hutzler Brothers Department Store, Baltimore, Maryland; University Hospital, Baltimore; Maryland Distillery, Halethorpe; Wight Distillery, Lorley, Maryland; Union Bus Terminal, Wash- [fol. 165] ington, D. C., U. S. Post Office, Cincinnati, Ohio, and the U. S. Post Office, Norfolk, Virginia.

I have given personal supervision to our company's Appraisal Department, and in appraisals I have represented the various fire insurance companies and also many owners, for fire loss appraisals. I have appraised hundreds of business properties in Baltimore and elsewhere in the State of Maryland, in the District of Columbia and in other States. These properties have included, for example, all the buildings owned by the State of Maryland, the buildings owned by the City of Baltimore, the Consolidated Gas Company, United Railway Company and the Telephone Company. I have also appraised about 10 per cent. of the industrial plants in the city, numerous office buildings and residences in this and other cities, and have been responsible for appraisal work in connection with many condemnation cases in Baltimore and Washington.

I am a member of the American Society of Civil Engineers, of the American Concrete Institute, of the Association of General Contractors of America, of the local Association of Realtors, of the Builders Exchange and of the

Builders Congress of Baltimore. I am now chairman of the Appraisal Committee of the Association of General Contractors of America and represent that organization in contact with the Appraisal Institute of the National Association of Realtors, and am a member of the Joint Conference on Appraisal Practice now working at the United [fol. 166] States Chamber of Commerce for the purpose "of developing preferably in tabulated form those things essential to be considered in appraising properties which are under consideration for Public Financing" and naturally subject to the provisions of the Federal Securities Act.

I have heard Mr. Frainie's testimony today and I was one of the committee he mentioned which appraised these buildings with Mr. Frainie and Mr. Chew. We have signed these two exhibits, A-9 and A-10, which represent our judgment as to the reproduction cost new and reproduction cost new less depreciation as of December 31, 1932 and 1933.

By actual existing depreciation I mean the diminution in value between a structure, or its component parts, in its existing condition as compared with that structure, or its component parts, in condition new. That is what I was commissioned to ascertain in this case. The procedure I followed to develop my conclusions regarding the actually existing depreciation was as follows:

In beginning our investigations we took into consideration four factors: first, those items that had depreciated and could be repaired, which really could be termed the deferred maintenance part of depreciation.

[fol. 167] And then there were those items that had deteriorated and could not be repaired without replacement of the whole part. In that case we figured the per cent condition that the parts left bore to the whole. Then there were items of depreciation that were noninspectable or observable but were inherent. Well, we developed our conclusions in regard to that type of depreciation by applying our judgment to all of the evidence that indicated to the experienced builder that inherent depreciation had taken place.

Then there was the depreciation in items that were not only unobservable but uninspectable, and we had to determine the depreciation in those items by outward signs of some inspectable item that would indicate to the experienced

builder that some defect or deterioration had taken place in the uninspectable item. The foundations, for instance, are not inspectable, but an experienced builder can determine from the cracks in the walls that depend upon that foundation for support whether the foundation had deteriorated or had a defect in it.

In making our first study (Exhibit A-9) our committee inspected for depreciation all of the buildings of the Telephone Company except a few miscellaneous structures totalling about $6,000.

In order to state in some detail the methods used in making these inspections I would like to read from the inspection report. Taking as an example 5 Light Street, Balti- [fol. 168] more, the Plaza exchange building, which is the largest of the Telephone buildings, the report covers 15 or 16 typewritten pages.

Picking out one or two items and explaining what we did in regard to those; we inspected the foundations and footings, that is, we drew our conclusions regarding them by an inspection of the walls that depended upon them for support.

Take, for instance, our report on the inspection of the reinforced concrete and cement: This building was inspected from roof to cellar by floors and our report by items is made in that same sequence. Under this particular item, with reference to concrete platforms under elevator machines in the penthouse on the roof, flaking and the cement work in both the elevator machine room and the fan room were badly in need of a coat of paint. The cost of these items amounts to $20. This item is taken care of under painting. The 11th floor construction: The concrete and cement work of this floor is in excellent condition, except the cement base is scarred and needs painting, which will be taken care of under painting.

Tenth floor construction: This is in the same condition as the 11th.

Ninth floor construction: The slabs, instead of being of reinforced concrete, are of terra cotta construction and not susceptible to inspection, but there is no evidence of a crack [fol. 169] anywhere, indicating clearly that no shrinkage or settlement has occurred in this particular element of the structure. On top of the arches there is a cinder fill with wood floor construction, all of which are covered with linoleum and, therefore, not susceptible to inspection.

All of the floors, however, have a topping which, while unexposed; we have a right to assume is cracked in places due to expansion and contraction, and rather than repeat this element of depreciation on each of the floors, we make mention of it under this particular floor inspection.

Eighth floor construction: same condition as 9th so far as construction is concerned, except there is a cement topping on the cinder fill instead of the wood floor, and while this cement floor is covered with linoleum, we have reason to assume it is cracked from expansion and contraction, and having taken due account of same in our conclusions regarding average depreciation for the concrete and cement element of the structure.

Seventh floor construction: same as the 9th. Sixth, Fifth, Third, Fourth, Second and First are all of repetition of the Ninth floor construction.

We estimated depreciation by each component part and applied a percentage figure on the condition of each component part. The Telephone buildings were excellently maintained and we saw no indications of unrepair of items that needed repair.

[fol. 170] We obtained our estimate of the existing depreciation as set forth in this exhibit, by taking all our observations together with the overall conditions of the buildings as a guide in the development of the depreciation in each of the elements of the structure. As I stated in the last case, I know of no rule by which depreciation can be mathematically calculated. Our conclusions regarding the present condition of any of the elements of the structure was based upon our judgment, which judgment and conclusion resulted from our inspection and experience. As I stated before, whenever there was an item that needed repairing, we estimated the cost of repairs. When an item needed repairing, but was not susceptible of repair, then we figured the percentage that the part left bore to the whole, such as a marble step had gone down ⅛ out of 2 inches, there was no occasion to remove the entire step. And then we also took into consideration the inherent depreciation; sometimes puncturing the plaster with a knife, to determine its condition. And then we further took into consideration the depreciation that was in the uninspectible parts, and the conclusions that we drew regarding them was from outward

signs in the inspectable parts. That was all a matter of percentage. And the final result we got was the result of our past judgment as to the amount that should be properly taken from the reproduction cost of the item new, to describe the actual condition, the existing condition of the item. We took into consideration, in my judgment, all the elements of depreciation.

[fol. 171] To arrive at the dollars of depreciation, we took the reproduction cost of each of the elements and multiplied it by the depreciation percentage, and then having added up the cost of depreciable items and having added up the depreciation in dollars that is generally applied against the depreciable items, we were able to divide one into the other, to develop the weighted average depreciation, which we applied to the entire structure, including the contractor's commissions and general overhead and the architect's fee. The percentage figure finally arrived at is the weighted average.

For the report as of December 31, 1933 (Exhibit A-10), we made a new depreciation study covering the buildings. We inspected all of the buildings in and adjacent to Baltimore, and all of those near Washington, and went through the same process as I have testified we did for the previous exhibit.

In comparing the 1932 studies with 1933 in Western Maryland and on the Eastern Shore, the appreciation has been ever so much greater than depreciation. The average appreciation ran 18% and 20%, which would have added $38,000 to the reproduction cost new of these buildings in Western Maryland and on the Eastern Shore.

These buildings were included in our report (Exhibit A-10) at the 1932 costs (as per stipulation between the parties) and for the purpose of ascertaining depreciation we grouped them and founded a weighted average for each group. The buildings in Western Maryland which were re-[fol. 172] inspected for depreciation as of 1933, I should say roughly constituted 85% of their money value, and on the Eastern Shore approximately 50%. Having found this new weighted depreciation as of 1933 we deducted it from the 1932 replacement cost, which resulted in giving us a less amount as of 1933 than as of 1932, thus disregarding all the appreciated costs which have occurred in the cost of both of these groups. As to the buildings in Central Maryland and

some miscellaneous structures, we did not reappraise or reinspect them but reported for 1933, the 1932 reproduction costs less depreciation in spite of the appreciation in the cost of material.

Cross-examination:

In the 1925 case I may have filed an affidavit in which I described depreciation as meaning deferred maintenance. In the case before the Commission, Mr. Lewin read a portion of an article in the April 1932 issue of a magazine called the "Constructor" that I do not recall ever having written. As a matter of fact, I did not write it. I was called upon by the Association of General Contractors to start a discussion at one of their meetings regarding faults of present day appraisal practices. I told them I could not get there and wrote them a letter describing how I felt about the whole situation and they read it. Some news reporter took it up and printed it in the magazine and Mr. Lewin read a portion of the article to me. The whole article should be read.

[fol. 173] As to the affidavit in the 1925 case, that there was no depreciation in the Telephone Company's property because the property was well-maintained and was kept up to its highest point of efficiency, I would answer that in 1925 I was 9 years younger than I am today and I have new ideas regarding depreciation and that I hope I will continue to learn a lot about the subject.

I have been an expert witness a great many times and have testified in a great many condemnation cases and things of that kind, and have been employed from time to time when a man wanted to buy a piece of property to go and look at it for him to see whether it was in fairly good shape from a builder's standpoint. Practical men try to find out the cost of the building in order to know what they are willing to pay for it, by getting the reconstruction cost new and then depreciating it in the way that I have done for the Telephone Company's property. My experience is that a lot of them do not do it, but they should do it.

The Telephone Company never employed me to buy any buildings for them on this basis. I have never bought a building for anyone. As a matter of fact most of the Telephone Company's buildings were built by themselves after their own plans. I think that the fair value of the Tele-

phone Company's buildings today is the reproduction cost less actual existing depreciation.

[fol. 174] In determining depreciation I take into account the age of some of the composite parts, and we use our judgment in determining what has happened to that particular component part by what we observe and by the tests we make on it.

Redirect examination:

It is not unusual to have to ascertain, in the best way we can, the value of a building which has perished by fire or other causes. I represented fire insurance companies for about twenty-five years, and we frequently went out and found only ashes and an outline of the foundation. It is usual to apply this very kind of study which I have been describing in adjusting fire losses, that is, on the basis of reconstruction cost new less actual depreciation, although I cannot see the building. As to whether if the building is not there, so that we cannot inspect for the existing depreciation, and all we have is the plan of the building, we can arrive at the depreciation without knowing the age: We can get it from history, from photographs, and from information from people in the immediate neighborhood. That is done time and time again. If a building has been destroyed and we are not able to see the building, we do not now use the straight line method of depreciation, although we used to do it. When we can see the actual conditions from which we can make our study, we do not use other methods.

[fol. 175] J. Kenneth Crosland, a witness of lawful age, was produced by and on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, plaintiff, and testified as follows:

Direct examination:

I am now General Commercial Accountant of the Western Electric Company, located at its executive offices at 195 Broadway, New York City. I live in Orange, New Jersey. I have been employed by the Western Electric Company since July, 1910. I started my work for the Company in the General Accounting Department and I have remained in that

Department during my entire employment by the Company. For some time during that period I have been responsible for the preparation and issuance of the Company's balance sheets and earnings statements, together with many of the more detailed allied reports which have been issued to the executives of the Company. I have become familiar with and have come in contact with every phase of the Western Electric Company's accounting. These detailed allied reports I refer to include the determination of the results of our business as related to that of the Bell Companies. I testified before the Commission in this case.

The Western Electric Manufacturing Company was organized in 1872 and took over at that time an instrument shop which belonged to the Western Union Telegraph Company and the business of Gray and Barton, which was a [fol. 176] partnership. That was before the invention of the telephone and the Company at that time carried on a general electrical business, manufacturing such things as fire alarm apparatus and Morse telegraph instruments. After the telephone was invented, the Company produced telephones and telephone appliances for the Western Union Company.

In 1881 the American Bell Company purchased from the Western Union Company its share in the Western Electric Manufacturing Company, when that Company decided to retire from the telephone field, and acquired at that time about 40% interest in the Western Electric Manufacturing Company. The Western Electric Company of Illinois was organized in November, 1881. The present Western Electric Company was organized November, 1915.

The A. T. & T., which was then known as the American Bell Telephone Company, had its first contract with the Western Electric in 1882. I have here a copy of the contract of 1882.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-11.")

By this contract the Western Electric obtained the exclusive right to manufacture telephones and telephone appliances in accordance with the American Bell patents for sale to the licensee contract telephone companies. It was designed to keep the quality of manufacture of telephones and telephone appliances on a high level of efficiency and qual-

[fol. 177] ity. It prevented the possibility of independent manufacturers charging the telephone companies unreasonable prices for patented articles, and it also prevented the possibility of those independent manufacturing companies charging varying prices to the telephone companies for the same articles. Another feature of the contract was that it insured—because of the apparatus and equipment being manufactured by one company—uniformity in quality and design. It brought the manufacturing unit and the telephone companies into close cooperation in the development and design of the best possible apparatus for the economic use of the telephone companies. Another feature was that there resulted from this contract a mass and standardized production for the Western Electric Company, with the natural result that the manufacturing costs were lowered. Of course this apparatus which was manufactured by the Western Electric Company, the one company, was assured to be interchangeable and the different types of apparatus were minimized in number, which had the effect of keeping the maintenance costs of the telephone companies to a minimum.

On April 8, 1908, this contract was modified in the interest of a wider use of this apparatus, and the Western Electric Company was permitted by that instrument to sell its apparatus to anybody who wished to buy, rather than just to the telephone companies. I have a copy of this amended contract.

(Thereupon there was offered in evidence by the Plaintiff an exhibit marked "Plaintiff's Exhibit No. A-12.")

[fol. 178] Under the terms of these contracts I can state very briefly what the Western Electric assumed to do as a manufacturing branch of the Bell system.

It can be summarized briefly in about four different headings. The first is that it has the responsibility of cooperating with the A. T. & T. Company and the various telephone companies in the design and development of the telephone apparatus best suited to the needs of the telephone companies. It must under this contract produce and sell articles of its own manufacture in accordance with specifications of guaranteed quality, in quantities and at such times as the telephone companies may reasonably require. It installs central office equipment as, and when the

telephone companies require it, and it is to produce and sell its product at prices which shall be reasonable and uniform to all the various telephone companies. If the Western Electric Company should fail to abide by the specifications of these contracts, the telephone companies are free to get their requirements elsewhere. But if they order their requirements from the Western Electric Company, the Western Electric Company must fill those orders in accordance with this contract.

The Western Electric Company of New York, the present company, was organized November 17th, 1915, and purchased all the assets and business of the Western Electric of Illinois, and has carried that business on until the present time. The A. T. & T. owns practically 99% of the out-
[fol. 179] standing stock of the Western Electric Company.

The principal business of the company is to manufacture telephone apparatus, such as central office equipment used by the telephone companies, including substation equipment and lead-covered cable, as well as the purchase of what we call supplies, which includes manufactures of others, such as poles and crossarms and conduits, insulators and so on, for resale to telephone companies in accordance with this 1882 contract, and also in accordance with the general supply contract which I believe will be introduced by a later witness. I should like to point out that in connection with prices the Western Electric Company operates under a dual responsibility in that, as I said, under the 1882 contract the prices shall be reasonable and uniform. The supply contract goes further and states that the prices shall be as low as prices to others for similar articles under comparable conditions.

Our definition of Bell Telephone Companies includes the associated telephone companies, of which there are now twenty-one; the Long Lines Department of the A. T. & T., and also the Sub-Licensee Telephone Companies of the Associated Companies. When I refer to Bell business, I refer to the business done with the companies which I have just described.

The Western Electric has a relatively small amount of non-Bell business which it sells to others than the Bell-
[fol. 180] companies. In the last seven years our sales to Bell companies have amounted to about 95% of our total. The non-Bell business consists of sales to our distributors

for resale to non-Bell customers, such as the Graybar Electric Company, which is our distributor in the United States to others than Bell companies; the Northern Electric Company, Ltd. of Canada, which is our distributor in Canada, and the International Standard Electric Company, which is our distributor abroad. We also sell some telephone apparatus and equipment and special commercial products to the Electrical Research Products Company, which is our 100% owned subsidiary, and carries on the sound picture equipment business. Also included in our non-Bell business are sales we make of telephone equipment to aviation companies and to our own employees.

I will give briefly some idea of the volume of the Western Electric business. If we take the corporate period of the present company, that is, from 1916 through 1933, we have sold of our own products, that is, the telephone apparatus and equipment and cable, about two and a half billions of dollars. Of the supplies, that is, the products which we have purchased from others for resale, we have sold about one and a half billions, so that during this entire period our volume of business of all kinds has amounted to slightly less than four billions of dollars. Now of the two and a half billions of our own product during this period, [fol. 181] about 90% has been sold to the telephone companies, and of the billion and a half of other purchases for resale about 70% has been sold them. Now this latter percentage is lower than at the present time, because prior to 1926 the Western Electric Company was engaged in a general electrical business, selling a lot of electrical equipment manufactured by others to the general electrical trade in the United States. That business beginning January 1, 1926, was taken over by the Graybar Electric Company, so that today of the total business that we had in supplies, about 99% goes to the telephone companies.

I have prepared charts to show from 1916 to 1933 the volume of business of the Western Electric to Bell customers and also to non-Bell customers.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-13".)

This is a chart which we prepared showing the scope of our business during the last eighteen years. The entire block represents the figure I mentioned a moment ago of

more than four billions of dollars. If we take the left hand rectangle marked telephone apparatus, that represents the portion of our business during this period which has been of the nature of a central office equipment, substation equipment, and such articles as that as are used by the telephone companies and others. And the shaded smaller rectangle [fol. 182] within that one is the volume of business of the type of apparatus which we have done with others than the Bell companies. It will be noted from this that of the total telephone apparatus business, 93% has been with the Bell companies, and about 6.6% with the non-Bell customers. The upper portion of the right hand side of the chart indicates the area represented by our sales of supplies, that is, the manufactured articles of others than our own, which we bought for resale, that would include, as I said before, such things as poles, crossarms and conduits. Of that for this entire period the sales to the Bell companies were 69.1% and to the non-Bell customers 30.9%. In the lower right hand corner of the larger rectangle there is the same information with respect to the sales of lead-covered cable, of which 92.5% was sold to Bell companies and about 7.5% to non-Bell. And the small shaded rectangle at the very lower right hand corner represents the volume of business known by us as special commercial products, which include such things as equipment used for the sound picture business, the radio business, the public address systems, and so on. Of this sale, as will be noted from this little shaded portion, almost 92% of it goes to the non-Bell customers and only a very small portion goes to the Bell.

(Thereupon there was offered in evidence by the plaintiff exhibits marked "Plaintiff's Exhibits A-14, A-15 and A-16".)

Taking up first Exhibit A-14, I will compare it with Exhibit A-13, which I have already explained. The difference [fol. 183] is that Exhibit A-14 covers a shorter period of time, that is, from 1926 to 1933. That shorter period has been taken, as I explained, as of January 1, 1926, when the general electrical business which the Western Electric Company carried on of buying products of other manufacturers for resale to the general trade was turned over to the Graybar Company. So that this chart shows the distribution of the Company's volume of business for this eight

year period. Similar to A-13, it shows in the left hand rectangle the sales of the telephone apparatus, that is, switchboards and telephones and associated apparatus made by the Western Electric Company during this period, of which about 96% was sold to the Bell Telephone operating companies. The small shaded rectangle represents the small percentage of such sales made to the non-Bell customers. The upper right hand rectangle of this chart is the one which shows the large difference in the character of our sales of supplies as between the Bell and the non-Bell from that shown in the previous exhibit. It shows that since we disposed of the general electrical business, 98.8% of sales of supplies have been to Bell companies, and a very small portion have been to non-Bell. This classification of sales covers such things as poles, crossarms and conduits. In the lower right hand part of the chart the sales of lead-covered cable are shown, of which about 94% was sold to the Bell companies and about 5.9% to the non-Bell. The shaded rectangle is, again, the volume of our special commercial products which cover such things as sound picture equip-
[fol. 184] ment, radio broadcasting and public address systems, the greatest portion of which is sold to the non-Bell trade.

Exhibit A-15 is a line chart which shows the progress of the volume of the Western Electric Company's business during the 18-year period of the corporate existence of the present Western Electric Company. The solid line is the volume of business done with the Bell companies, and the dotted line is that done with the other customers. It shows particularly in the latter years how small a portion the latter is to the former.

Exhibit A-16 is a division of the black line shown on A-15 by the three main groups of our products, that is, telephone apparatus, supplies and lead-covered cable.

At present we have four manufacturing plants. One is located in Hawthorne, Illinois, just outside of Chicago; another is in Kearney, New Jersey; a third is located here in Baltimore, known as the Point Breeze plant, and the fourth is the so-called Queensboro Works, located in Long Island, New York.

The Hawthorne plant is the largest and oldest and has been operating since 1905. The Kearney plant has been

operating since 1925, Point Breeze since 1929, and the Queensboro plant was acquired in 1929.

[fol. 185] We have now about twenty-nine distributing houses through the largest cities in the United States, and we also have an installation department with divisions in about ten of the largest cities in the United States.

I am using in my testimony data from our books and accounts and records. The general books of the Company are kept at the headquarters at 195 Broadway, New York, but all the subsidiary locations to which I have referred have subsidiary books of their own. The accounting in the latter is carried on in accordance with instructions and routines issued from time to time by the Comptroller of the Company, located at 195 Broadway, who is in direct charge of the general accounting department of the Company. The earning statement and balance sheet of the Comapny, as well as other statistical statements, are compiled in the general accounting office in New York, and that is where the results of the Bell business of the Western Electric are determined.

I have prepared an exhibit showing the net profits of the Western Electric on its Bell Company business.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-17".)

This exhibit shows for the 17-year period, 1916 to 1932 inclusive, the results of the Western Electric Company's [fol. 186] business with the operating telephone companies of the Bell system. The figure in Column A represents the sales of the Western Electric Company to the Bell operating companies year by year. The figures in Column B are the total actual costs of those sales; and they include not only the manufacturing costs of our own product, that is, the telephone apparatus and cable, but they also include the purchase cost of the supplies, that is, poles and crossarms that we have purchased from other manufacturers for resale to the telephone companies. They also include the installation expenses of the company where they have been incurred, the development expenses of the company, the merchandising, distributing and general expense of the company, also Federal taxes; and there is included in this column also interest credit which the Company has received in its ordinary course of business with the telephone com-

panies, most of which is with respect to the stocks of returned material which the Western Electric Company has to maintain for the operating telephone companies. All those expenses, as they apply to the Bell business, are shown in this column B. Column C is merely the mathematical difference between the figures shown in Columns A and B, and represent the net profits. This column shows the amounts of the Company's net profits year by year, which have resulted from the business which it has done with the operating telephone companies. Column D is the percentage relation of the net profits shown in Column C to the sales shown in Column A, and indicates the total—the last figure in the column indicates that on the average the Company has earned 4.5% on its sales over this period. [fol. 187] The Column E, the average investment, represents the average during each of these years of the assets of the Company which have been devoted to the business which it has done with the telephone companies. It includes several items. It includes the plant of the Company, the cost of the plant, that is, the grounds and the buildings and permanent fixtures, machinery and tools and furniture and fixtures, and so on. It includes the cost or the market value of the inventories of our manufactured products and of purchased supplies. It includes the receivables on our books from our customers, and the cash in the business devoted to the business done with the operating companies. And from those four items there is deducted the current accounts payable due suppliers. It is those four items minus the fifth that represents the average investment devoted to this business. There is nothing included in these figures of average investment for patents, good will, development expense and going concern value. The inventory of manufactured products is valued at cost or market, whichever is lower.

The figures in Column F, the percentages in Column F, are the relation of the profits shown in Column C to the average investment figure shown in Column E, and indicated that over this period on the average the Company has earned 5.8% on its average investment devoted to this business.

The year 1933 is not included on this exhibit, because [fol. 188] although the books have been closed for some time, and the actual results for 1933 are available, we have

not as yet completed the studies necessary to apportion the various costs and assets which were devoted to doing the business with the Bell companies. However, based on the actual results for the whole Company, it is my opinion that we will have sustained a loss in 1933 which is larger than that shown for 1932, which amounted to $7,619,000.

The sales figures in Column A are taken directly from the books. However, our books do not show a division of our costs and average investment devoted to the Bell business and devoted to the other business separately. This is so, because when we manufacture an article we do not know to whom ultimately it is going to be sold, so that our books could not show a division of our costs between the classes of customers; so that it has been necessary during this entire period of time for us to make apportionments statistically of our costs and average investment, dividing it between that devoted to the Bell business and that devoted to the other. This has been done on the basis of the usage of Company's facilities, the usage of the material that entered into the products, and the usage of the labor that was employed in the production of the articles which were sold to the Bell and to the non-Bell customers. I believe that that method is a sound one and gives us accurate results.

The firm of Arthur Young, who are independent certified [fol. 189] accountants, have audited our processes of apportionment for the entire period covered by this exhibit, and they have approved those processes and have approved the figures that are shown on this exhibit. They have furnished us with a certificate to that effect.

This Exhibit A-17 is not exactly the same as was offered before the Statutory Court in the Illinois Bell case, but it is the same with the exception of four adjustments which we believe it would be proper for us to make to the book figures during this period of years.

The first of these adjustments was one which had to do with reserves which the Western Electric Company had set up in the years 1924, 1925, 1926 and 1927, of about $2,000,000 each year against a future decline in the value of property which we were acquiring at that time. That charge was made to expenses in each of those four years as the reserve was set up, but the amounts were not deducted from the capital accounts; that is, we merely created

a reserve. At the end of 1932 the situation against which we reserved, that is, the falling in price, we believed had taken place. So we merely closed the reserve out against the capital accounts and at that time did reduce the capital accounts of the Company. Now, the adjustment which we have made is this: We have gone back and reflected in this exhibit the situation which would have been on the books [fol. 190] if we had at the time we set up the reserves, reduced the capital accounts. The effect has been to reduce those capital accounts since 1924 and to, therefore, reduce subsequent charges to expense for depreciation, and to increase slightly the showing of profit.

The second adjustment was one which had to do with a reserve which was set up in 1924 for an Employees' Benefit Fund. In compiling the statistics of the results of 1924 in early 1925, all that $2,000,000 was charged against the business with the Bell companies. We believed that a part of that should have been charged against the business with non-Bell companies, because our employees were devoting some of their time to that business. So we also went back and made that adjustment, and that had the effect of slightly increasing the profits that year on Bell business.

The third one was to make the statistics comparable for this entire period with respect to the method of handling the cost of patents. In the early part of this period patents as purchased were charged to surplus, but the practice of the Company was changed so that patents were charged direct to the operating expense accounts in the year in which the patent was purchased. What we did was to go back and make that comparable and place the earlier years on the same basis as the later years.

The fourth adjustment was a very small one and was made to substitute for the Federal tax accruals the actual taxes which were subsequently paid applicable to that busi- [fol. 191] ness. In closing the books we set up a reserve which was the closest figure we could get at that time representing the taxes we would have to pay, but when we paid the taxes there was a slight variation, and that variation has been given consideration in the figures shown on this exhibit.

The effect of these four adjustments on the per cent. return on investment shown in Exhibit A-17 is to increase

the return 1/10 of 1%. Without the adjustments the return would have been 5.7%.

I have also prepared an exhibit to show the return on the investment of other large manufacturing corporations.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-18".)

This study shows the return on investment for 88 companies. The first time this study was made up was in 1930 and covered the five-year period of 1925 to 1929. We took a five-year period because we wanted to get some span of years which would be fair to use, not a short period, not one or two years, because that would not reflect the Company's operations for a sufficient length of time. The source, the original source of information that we worked from was Standard Statistics Bulletin, which is a bulletin that lists all the larger industrial companies in the United States. In that bulletin there are listed 579 companies, and I suppose those companies were considered by the Sta- [fol. 192] tistics Bulletin or the statistics people to be companies of somewhat large activity, companies whose stocks appeared on exchanges in various cities, or companies that had bonds outstanding; and they also presumably included that number because that was the number from whom they had received statistics in such form as to permit them to make up a consolidated statement of earnings and a balance sheet for the industrial manufacturers in the country.

Now, we started with 579 companies and then put these companies to certain tests. The first test that we employed was one of comparability in the kind of business done: that is, we left out oil companies, extracting companies, sugar refining companies, meat packing companies; we also left out steel companies, because, although the steel companies have very large manufacturing activities, they also have substantial interests in shipping and railroading and mining, and it was not possible from the source that we were working to eliminate those latter interests from the total. So that we felt that to get a comparable statement we should omit these steel companies. Now, that elimination, that test with respect to comparability eliminated 308 of these 579 companies. That brought the total down to 271.

Then the next test that we put those 271 companies to was a test as to whether the information published in Poor's & Moody's manuals for those companies was in such form as to permit us to know to a reasonable degree that the figures were on a comparable basis, and we found that [fol. 193] that was not true. We found that a good many of these companies reported their statistics in such fashion as to make it impossible for us to know that it was comparable on the basis I mentioned, and we eliminated them. This elimination had mostly to do with the way that a company handled its depreciation reserve on plant. A great many of those companies did not indicate, in the first place, whether their plant was gross or net, and others indicated that it was net, but they did not indicate how much had been deducted for the reserve. So definitely we knew that those instances were not comparable with ours, and we left them out, and on that test we eliminated 110 companies. That left 161.

Now, the next test that we applied was one with respect to the size of the company. We wanted in this test to get a number of companies which were profitable companies, companies which were well-managed. We did not want to include a lot of companies which, because perhaps they were not so well managed, had been consistently losing money. So we applied this test, that if in more than one year out of the five their earnings were less than $1,000,000, we left them out, and if for the five-year period their profits were less than $5,000,000 we left them out. On that account we eliminated 77. That brought the total down to 84. Then we found in the examination of Poor's & Moody's manuals that there were four companies not listed in the original 579, but which did meet the tests that I have just explained. So we added them and that brought the total up to 88 companies.

[fol. 194] I have also prepared another exhibit which reflects the net profits on sales of a part of the 88 companies referred to in Exhibit A-18.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-19".)

I do not have information with regard to all of the 88 companies referred to in the previous exhibit to enable me to compute the net profits on sales. In examining Poor's

& Moody's manual I found that of the 88 companies shown in Exhibit A-18, only 38 gave information with respect to sales. In Exhibit A-18 we show the average earnings per year and in Exhibit A-19 we show the cumulative profits for the eight-year period. Arthur Young & Company have also audited the source of this information and have approved our process of setting up the figures and also the figures as shown on these two exhibits. These two exhibits do not show the year 1933 because the manuals which we have used have not been issued yet, and probably will not be until around the middle of this year.

As to the reasonableness of the Western Electric return on its Bell business, these two exhibits show that the earnings of these 88 and 38 companes, respectively, have been considerably larger than the Western Electric Company's profit on its Bell business. It is my opinion that the profits of the Western Electric Company on its Bell business, considering the type of the business and the risks of the business, have never been unreasonable or high.

[fol. 195] The general policy of the Company in establishing prices and making changes in prices has been to set them commensurate with a fair return on the average investment used in the business. Even during that period of years from 1920 to 1929 when other manufacturers were increasing their prices, or, at least, maintaining them, the Western Electric Company was making substantial reductions in the prices of its telephone apparatus and equipment, that is, its switchboards and telephone, to the telephone companies. These price changes were made possible, to a large degree, that is, reductions were made possible to a very large degree because of the ever increasing volume of business which the Western Electric was getting from the operating telephone companies. As an instance of that, during the five-year period from 1916 to 1920, the average annual sales of telephone apparatus by the Western Electric Company to the Bell companies was $35,000,000. In the next five-year period, that is 1921 to 1926, it averaged $100,000,000, and in the next five-year period it averaged $150,000,000. Now, of course, that vastly increasing and steadily increasing business resulted in the fact that it was going ahead faster, increasing faster than our overheads were increasing, and we were able to make

substantial savings in the cost of manufacture. These savings were passed along to the telephone companies in the form of these price reductions. Now, also during this period we conducted very extensive studies with respect to research and design, cost reduction studies which resulted in our being able to employ very economical processes of manufacture, changing the type of the product [fol. 196] so that it might be manufactured more economically, all of which resulted in savings to the Western Electric Company in the form of lower manufacturing costs, and which were turned over to the telephone companies in the form of these price reductions.

Comparing prices charged the Bell companies with prices charged to others, it has been the general policy of the Company that prices to others for equipment of our own manufacture are never lower and in most cases higher than the prices for similar telephone apparatus sold to the Bell companies.

(Thereupon there was offered in evidence by the plaintiff an exhibt marked "Plaintiff's Exhibit No. A-20".)

This Exhibit A-20 shows the estimated effect of the price changes which the Western Electric Company has made to the operating telephone companies during the period 1921 to 1933, on new telephone apparatus and equipment. Now, the exhibit shows in the first column of figures, Column A, the sales made during each of these years to the telephone companies of this apparatus to which the reductions apply at the level, price level in effect at the end of the previous year. The second column of figures shows the effect of the price changes made in each of these years on an annual basis.

For instance, the figure of $1,200,000 in the first line of Column B means that the price reductions in 1921 resulted [fol. 197] in reducing the purchase price of the telephone companies on apparatus and equipment in 1921 to a figure $1,200,000 less than the amount shown in the first column, or as shown in the third column, 1.7% of the previous year ending price level. Column C shows the percentage reduction in prices on an annual basis during this entire period. Now in Column D is the percentage relationship of the average price level of the apparatus and equipment which we sell to the telephone companies in relation to the price level at December 31, 1920, which is taken as 100,

and that indicates, for instance, that the price level at the end of 1929 was 58.5% of that which was in effect at December 31, 1920. There have been no general changes since that time up until the end of 1933, except for the increase in 1930 which of course, was very large. Since that time there have been but minor changes. So that the price level at the end of 1933 was 65.2% of that which was in effect at the end of 1920.

I would not like to carry the comparison down to an individual article, but on the average the price which we charged the telephone companies at the end of 1929 was 58.5% of the price that we charged for similar articles at the end of 1920, and that reduction was made possible because of the increased volume that we were getting all during this period. If the sales which we made to the telephone companies in 1930 of about $141,000,000 had been [fol. 198] sold at the level which was in effect in 1920, in other words, if no price change had been made they would have paid $97,000,000 more than they did pay, or about 70% more than they actually paid. In 1929 a net reduction was made of $12,500,000, and in 1930 a change was made which resulted in an increase in price. I will explain this increase and decrease in 1929.

We had been receiving during this entire period a very rapidly and steadily increasing business, and when we entered the year 1929 it appeared at that time that we were going to get a business which would result in the return on the investment of about 11%. As the year progressed the business continued to increase and about May of 1929 the view for the year 1929 had gone up still further, and the business that was forecast for 1930 had gone up to such an extent that it looked as though we might obtain a return on the investment of about 13% or 14% at our then price level. Now it was not considered in accordance with the Company's policy that it should obtain a return of that kind on the money devoted to the business, so it was decided to make a price reduction as of July 1, 1929, which had the effect of reducing prices charged to telephone companies by about $7,500,000 on an annual basis. It was recognized at the time that that reduction was made that if we did not get the business that appeared to be coming to us at that time, or if we did not get an increased business which it looked as though we might get

at that time, it would be necessary for us to increase prices. [fol. 199] Now we completed the year 1929 even after this price reduction with the largest volume in the history of the Company. In 1928, as far back as that, it appeared that the increase in the business was going to be large and we had to use during this period of rapid expansion every facility of the Company to the utmost degree. We had to take on very large numbers of employees. We had to resort to overtime and night work, we had to go out and rent leased space to augment our owned properties for additional manufacturing space and warehousing space. Large additions to the existing plant of the Company were authorized, as was in that year of 1928 the purchase of this Point Breeze property here in Baltimore. Also when we started 1929, the future looked pretty bright and we went on increasing our facilities; we made large extensions or additions to our plant at Hawthorne and Kearney. We acquired more property adjacent to our Kearney works, and we acquired this so-called Queensboro property in Long Island. We put the first unit in production in 1929 at Point Breeze. Of course we were having difficulty meeting the current requirements of the telephone companies, let alone what appeared to be increased requirements in the future, so that we were straining every facility that the Company had to keep pace with the needs.

Now, we entered 1929 with the biggest volume of business in the history of the Company, and we had a budget that went into 1930 which indicated a large increase even over [fol. 200] that period, but the depression had started and as the months progressed in 1930 we saw that this business was falling away from us very rapidly, until we came to September of 1930, when then it was very clear to us that not only were we not going to get an increase in business in 1930, but we were going to get very much less in 1930 than we had in 1929 and that our return on investment was going to be considerably less than that that we anticipated at the time we made this price reduction in 1929. In September, 1930, it was perfectly clear that the volume was going to be very low, also at that time the indications for 1931 were that we were going to get less in 1931 than we got in 1930.

Now, having made this reduction in 1929, July 1st, recognizing that if we did not get at least as much business in the future as we had gotten and it looked as if we might get

then, we would have to increase prices, and recognizing that we were getting not only not an increase but getting less, it became absolutely necessary for us to restore as of November 1, 1930, the average price level which was in effect at the end of 1928. In other words, I think you can see from the exhibit that after the price increase in November of 1930 the price level at the end of the year was 64.4 and that the price level at the end of 1928 was 64. So that what we did was to restore on the average overall for this apparatus and equipment the price level which was in effect at the end of 1928. Now I don't mean by that that the price for every individual article was returned to the old price. [fol. 201] There are probably some that went up more than 10% and some less than 10%. I think there were a few cases where there were reductions, but at any rate the overall effect of all the changes made November, 1930, was to restore on the average the price level which had been in effect at the end of 1928.

Of course, as it became apparent that the business was going to fall off we were faced with a situation in 1930 which was just absolutely opposite to that which we had in 1919; instead of preparing for a rapidly expanding business we had to turn about and face a rapidly contracting business, and it was necessary then for us to take every step we could to stop the expansion we had started, and we had to let go a great many of the more recently employed people, we dispensed with the overtime work and the night work, and we got out as fast as we could from the rented properties—and abided, of course, by the leases—but got out as quickly as we could; and then, of course, our construction program was held in abeyance, and we stopped any further construction of additional property, which had been authorized in 1929. Of course, some units may have been practically completed, and in those cases we just completed them. But in other cases we went no further than just to lay the foundations, and then we stopped. This increase in 1930 does not apply to supplies which are not manufactured by the Western Electric Company, nor does it apply to cable; it just covers the prices on new apparatus and equipment of our own manufacture.

[fol. 202] To answer the question as to why did the Western Electric Company not go back to the 1921 prices in order to avoid an approximate loss of $7,000,000 in 1932

and an anticipated loss in 1933 of even more, I wish to state as follows: I think in the first place we had laid a background for what we might do if we did not get the increase, when we made the reduction in 1929. But I think to have gone back to December, 1921 level would have been to reflect in the prices a situation which resulted from the fact that we were working at a very low capacity rate. It would have meant that we would have tried to recover to the fullest extent all of our overhead expenses of maintaining a plant which was equipped to turn out a very much larger amount of business than it was getting. We did not believe it was possible commercially to set up a price which would recover for us on one-fifth of the capacity of the plant, the carrying charges on the entire plant. To raise the prices to such a figure would just have been an uncommercial thing to do. What we tried to do was to restore the level to what it would have been, realizing that when we made the reduction in 1929 we were doing it on the basis that we were going to get a terrific amount of business. It seemed to us that that amount of business was going to put us in a position of doing a very large business, as much as $450,000,000, something that had never been heard of.

Furthermore, the decrease in volume came on so fast that [fol. 203] we could not possibly keep up with it. We would have had to change prices every month practically to have met that situation; and it was, I think, in the hope that the situation would not be quite as bad, and would not continue to be quite as bad as it has turned out to be, when we made that increase in 1930. I may add this, that if we had raised the prices to that high level of 1921 there was no assurance we would get any business from the telephone companies. Competition from other companies is also always in the picture. We could never raise prices to such a degree, because in accordance with our contract, as I have already explained, if the telephone companies can get the product of the same quality elsewhere, they are perfectly free to do it; and I think if we had raised our prices some 70% in 1930 that situation probably would have come about, and we would have been in the position of possibly losing a great deal of business. If the Western Electric Company does not meet the specifications, the telephone companies are free to get the equipment where they believe they can get it. I know of cases where telephone companies have purchased

their requirements from other sources of supply than the Western Electric Company, but I can not say whether it was against the orders of the A. T. & T.

There has been no general increase in prices for apparatus and equipment from November 1, 1930, until December 31, 1933. There was, however, an increase in the price of this apparatus and equipment as of January 1, 1934, which had the effect of increasing the price level about 10%, that is, to about 71.7% as compared with the 65.2% shown on Exhibit A-20. That is about the same level that existed at the end of 1927.

[fol. 204] The Company in 1933 had increased costs because of the Industrial Recovery Act and because of the President's Reemployment Agreement. We had in 1931 reduced our working hours from five and a half days a week to five, and then again on July 1, 1932, we reduced them from five to four and a half. Now, each time that was done there was a corresponding reduction in the man's wages or salaries, which did not mean that the unit cost of the Western Electric Company was affected at all, because they were paying the same rate per hour or the same rate per piece, but it did mean the Company was paying less money, because they were working less time. In 1932 and 1933, of course, we had to do all we could to meet the situation, and all employees were requested to take an extra week without pay. On April 1, 1933, there was a horizontal cut in all the salaries of the Company. Up to that time the cumulative effect of all these things on the employees' check was about 27% reduction, but on August 1st, due to the Industrial Recovery Act, we restored to all shop employees and to all salaried employees getting less than $2700 a year this 10% which was taken off April 1st, and that restoration was made to about 90% of the employees of the Company at that time. Now, at the end of 1933 there was another individual consideration of salaries of people getting less than, I think it was, $3700 a year and individual cases of merit were considered in some increases in salary at that time.

[fol. 205] Now, also another expense to which the Company was put was in connection with the Reemployment Agreement of President Roosevelt. There is a paragraph in that agreement to the effect that if because of the signing of this Agreement the costs or the prices, the costs of

suppliers who furnish our materials shall have increased as the result of this agreement that we, after ascertaining that fact, would revise our fixed price contracts, to take that into consideration, and that was done, and the result was that we had to pay more than was originally contemplated on these fixed price contracts, because of that situation. Of course, also, there have been additional taxes placed upon corporations in the last year or so, which also has aggravated the situation a little further, and all these things taken together are the reasons why we made the increase of 10% as of January 1st of this year. This refers just to our telephone apparatus and equipment. The supplies being purchased on the outside, our prices follow very closely the costs to us from the outside, and in the case of cable, a very large portion of which is material such as copper and lead, our prices have, up to recent years more or less followed the trend of the market prices for copper and lead. They have not in the last two or three years, because, obviously, we could not reduce our prices even though materials went down, because our carrying charges with a very much lesser amount of business were continually rising, and that was offsetting the effect of the lower price of materials.

[fol. 206] About 43% of our sales to telephone companies are affected by the price reductions to which I have just referred. It is my opinion that the sales by the Western Electric to The Chesapeake and Potomac Telephone Company, of Baltimore City, offer a reasonable cross section of the Company's sales to all Bell companies over a long period of time because all of the telephone companies are set up to give the same general kind of service, and are very highly standardized.

(At this point the certificate of Arthur Young & Company, Certified Public Accountants, previously referred to, was offered to defendants' counsel for inspection, and the latter agreed that if a representative of the said Company were present he would testify to the certification of the figures as stated by the witness.)

I can state roughly the percentage of our sales prices for apparatus sold to the Telephone Company which is represented by labor. Of our total cost of doing business, which is reflected in our prices to the telephone companies, about

30% in 1932 was the cost of manufacturing apparatus and equipment. About 32% of that was represented by labor, so that approximately 10% of 1932 total cost was represented by wages paid to our employees manufacturing apparatus and equipment. From 1920 to 1929 wages have increased very rapidly, faster than the reduction in the cost of materials that we used. It is a matter of common knowledge that wages generally since 1929 have decreased. We did not decrease the rate of wages except for a short time [fol. 207] to the extent of possibly 10%, which was very promptly restored under the National Industrial Recovery Act. Generally it is correct that since 1929 we have made no reductions in our general rates of pay except the one on April 1, 1933. I do not have available information as to how our wage rate compared or compares with the labor rate per hour paid by companies comparable to us, such as some of the 88 companies to which I have referred. I do not know why we have not decreased wages since 1929 along with most manufacturing concerns, but I do know that most people are getting less money. I do not know to what degree that is caused by their working less time or to what degree other companies have actually reduced their salaries. Of course, the Western Electric employees are taking home considerably less money than they were in 1929. That has been because of the short time, and I imagine that that feature has been employed by a good many other manufacturing companies. I do not know whether other companies have done more or less than we have in reducing wage rates.

Cross-examination:

I did not testify in the case of the Chicago Telephone Company. I think this is the fourth case in which I have testified. I am, however, somewhat familiar with the Chicago case. The increase in prices for 1931 and 1932 presented here are the same as those presented in evidence in the Chicago case, but I am sure that 1933 figures were not [fol. 208] on the statement submitted in that case. The increase of 10.2% was shown in that case. I know that the Court in the Chicago case found that the prices were reasonable except for that increase of November 1, 1930.

Referring to Exhibit A-17, we have no record which will give us the actual cost of any isolated item of our products.

We maintain what we call a standard cost system. This is based on estimates of what it is believed will obtain with respect to labor rates and material prices and manufacturing conditions over the period during which these standards are going to be used. The General Electric Company has a standard cost system. The Western Electric standard costs have been revised by us as often as once a year, but in some instances for various reasons they have been allowed to remain for a longer period. The last time we made a revision in our standard costs was January 1, 1930. We have not made any changes in them since that time, although there have been revolutionary price and cost changes. During such a period as we have been going through it would be a very difficult matter to determine a standard cost. We do not know the business we are going to get, we do not know the conditions that are going to prevail. It is hard to tell what the prices of material are going to be. We can tell readily, from our books how much the variation in the cost of our product in these standards is due to a variation in the price of material, and it is much easier for us to handle it in that way than it would be to try to change standard [fol. 209] costs weekly or monthly or even annually. I know that the General Electric Company has made isolated changes in their standard costs recently, but I do not know why nor do I know the extent of it. The ascertainment of standard costs is not done merely for the purpose of fixing prices. It is done to facilitate the accounting operations of the Company. The foundation of this exhibit is not standard costs but actual costs. Generally it is true that, with the exception of some items (about 30% of the total), which we could identify in the way of costs and in the way of investment, we apportioned our total cost of sales and our total average investment for the purpose of this exhibit on the basis of so-called standard costs which were made up in 1930. But I would like to correct that statement to this extent: that we did not take the total cost of sales as one lump figure and apportion it between Bell and non-Bell business on the basis of standard costs. We made some division of that, recognizing the different character of our product, such as telephone apparatus and cable and special commercial products, and we handle these groups separately. It is fair to say that the cost of raw materials to the Western Electric Company, which go into telephone

apparatus in 1932 decreased approximately 34% from the estimate which we thought we would have to pay in 1929. Our prices are not based solely upon standard costs. Standard costs do not affect our prices except in this way. Having set up a standard cost, it is a place to start in setting a price. There are any number of things that have to be [fol. 210] taken into consideration in building up a price. One of the definite things taken into consideration is the variation of 34% less for materials than we had included as an estimate in the standard prices. Prices would be decreased if they had ever been made up before on a higher level, and the prices would be established on the basis of the cost we paid for the materials. It is not a fact that our prices were higher because of the erroneous estimate as to price of materials. This is because prices are set up first on standard costs at any given time and are modified for the variation there exists between the material prices in those standards and what we paid for them. We modified standard costs in 1930, at which time we gave consideration to material prices as of that time, and we were paying then considerably less than the prices which were included in the standard costs. The reduction in the cost of material of 34% had no direct influence on the prices charged to the telephone companies in 1932. For example, if in 1932 we set up a price for a piece of apparatus we start with the standard cost for that article. We know, as a matter of record, how much variation there is in the cost of materials which we are using from those which are included in the standards. We will modify the standard cost at that time to reflect that variation and we will reduce it in the case of a 34% decrease by applying 34% to the material factor in that cost. In the years when we were making money, and particularly with respect to cable prices where materials play such a large part, we followed almost monthly the market on copper and lead in establishing prices for [fol. 211] cables. But since we have entered this depression and since our other costs have gone up so greatly, it does not make much difference whether we had changed our price for materials. If we did reduce them we would simply be increasing our loss because of the fact that we have so little business. So that since 1930 in our cable prices we have not followed the previous policy of revising

cable prices every month to meet the change in the metal market.

The apportionments between Bell and Non-Bell were made on the basis of the standard costs estimated in 1929. The apportionment might be different if we had brought our standard cost system up-to-date, but I doubt it, and if it were different, it would be in a small degree. I have already stated that in making our apportionments we used the basis of usage of our facilities, of material and labor entering into the product, and this involves the use of standard shop costs. When we set up standard costs we included in all of them the same level of materials, the same level of labor, and the same overhead percentages, so that, no matter to whom an article was sold subsequent to its manufacture—it made no difference—the standard cost of sales to the Bell vs. standard cost of sales to the non-Bell reflected to the same degree the usage of our facilities. Therefore, it would not have made any difference whether we used revised standards for that purpose or standards which were set up five years ago so long as when they were established they did include for both Bell and non-Bell the same level of material and labor used in the product. It gave us a yard stick which is the same on both sides.

[fol. 212] The same general type of equipment is sold to the Bell as to the non-Bell, the same type of cable is sold, and that being the case, and the fact that those standards include the same level of materials and labor, we get accurate measurements of the use of facilities of the Company and its costs by using these standard costs.

In 1929, anticipating that our volume would continue or even increase in the future, we built more plant and facilities than we are using now or have used since 1929. I think our shop activity in 1932 was down to about 25% of its activity in 1929. I know it is lower in 1933 than it was in 1932, but I do not know just how much. By reason of the depression at the immediate present we find ourselves with a substantial property of idle plant and excess capacity on our hands, but our business is not one that we do month by month with the customer. It is not a casual arrangement. We have built up those facilities for use and we believe that they will have a future use. The reason we had to make the increase of prices in 1930, to which I have testified, was that we were not getting the business.

And the reason for that is if we did not get the business and we have those facilities, it is costing us more to carry on, and that is the reason we made the increase. We had an increase in prices in 1930, and of course the volume has fallen off very greatly even since that time. The actual prices today are way below the actual cost of the product. The variation between price and cost today is very large and the cost is high because the volume of production is so [fol. 213] low that we can not possibly hope to recover in our prices sufficient to cover our overhead expenses. I do not know that there is any market price for apparatus and equipment. I think the return on investment is a far better measure of the Company's earnings than percentage on sales. Column E on Exhibit A-17 includes the undepreciated value of the plant. The cost of sales included in Exhibit A-18 includes in it the accrued depreciation charges in the year for depreciation. In dealing with the return on investment we are not deducting from our investment account the depreciation reserve created by the charges to depreciation expense. We have elected in this exhibit to show earnings on the total of money in the business, including that recovered through the depreciation reserve.

Referring to Exhibit A-18, we have done as much as we could by elimination to reduce these companies to a comparable basis in order to make a comparison.

The Western Electric Company does escape sales expense and we avoid advertising expense, and therefore the saving is reflected in the prices that we charge to the telephone companies. In addition to that we have a risk in our business which some other companies do not have, because generally speaking we have only one customer and if that customer does not require any products we do not have any business. I do not think that the Western Electric is to all intents and purposes a public utility. We operate [fol. 214] as a manufacturing unit, and the A. T. & T. owns practically the entire stock of our Company. We do not have very much credit risk expense with the Bell Telephone Companies, and to that extent our prices are lower than the ordinary manufacturing business. We set the prices up on the basis of a fair return on the investment. If we do not have certain expenses we do not consider them in the establishment of the prices. I think it is true that the sales expense of some of the manufacturing companies I

have referred to would run as high as 25%, but I could not say definitely and I would not be surprised if today the situation would be very different from normal conditions.

The 88 manufacturing companies which I have compared with the Western Electric Company vary a great deal in the return which they made over this period on their average investment. Some companies made very large returns as, for instance, the General Motors Corporation, which has a good deal to do with bringing up the average. The Reynolds Tobacco Company also shows a very large rate of return. I would not say that a great many companies among this list are engaged in novelty and specialty business, which shows over this period an abnormal rate of return. I think the selection of companies has been made in an effort to get a general comparison of manufacturing companies whose processes of manufacture are somewhat comparable with the Western Electric. I do not think it is true that the tobacco companies and drug companies do not constitute a fair comparison with our Company because [fol. 215] of their high returns. I do not think there is any significance in the fact that a certain percentage of these companies earned less than 6%. I am not particularly interested in individual earnings, but am trying to get an overall picture of a fair comparison. I believe that the electrical manufacturing companies on the list, such as the General Electric and the Westinghouse, are more nearly comparable with the Western Electric. The Westinghouse Company, number 85 on the list, shows roughly about 5%. I do not think that is a much better basis of comparison than Reynolds Tobacco, for instance. I am not saying any one of them is the proper comparison to make. The comparison we have offered is the overall picture of all these companies.

Referring to Exhibit A-20, Column D, there is no particular significance in the fact that we started with December 31, 1920, in giving our index figures of price trends, except that the period from 1921 to 1930 covered a period of very large activity in the Western Electric Company. It may be true that 1920 was a year of the highest peak of prices that the United States has ever experienced, but even so the Western Electric Company did not go up as fast as other industries in setting their prices and had not reached anywhere near a similar peak. I do not think that the gen-

eral experience in the decline of prices of general commodities and manufactured articles or a decline in price levels from 1920 through 1929 was anywhere near the extent that Exhibit A-20 indicates for this Company. We were con- [fol. 215½] stantly reducing prices, and I think during this period other manufacturers, if they were not increasing, were at least maintaining prices. I suppose the automobile prices have unquestionably come down. When you get to the point of 1929, instead of coming down more sharply, our prices go up for the reasons I gave on direct examination.

Redirect examination:

The percentage of return that the Western Electric Company had for the period 1916 to 1932, after deducting the depreciation reserve, can be computed from Exhibit A-17 if we take the average investment figures in Column E and reduce them by the amount of the depreciation reserve account. The return then during this period, instead of being 5.8% as shown in Column F, would be 7.5%. I can also give the return for the shorter period comparable with the period set forth on Exhibit A-18 for the 88 companies. On the basis of deducting the reserve account, this would show a return of 7.9% and for the 88 companies the return, instead of being 9.3%, would be 11.3%. The figures appearing on Exhibit A-17 are actual costs and are not standard shop costs.

When I said on cross-examination that I did not know there was any market price for telephone apparatus or equipment I had in mind that as far as the apparatus and equipment which we sell to the Bell companies is concerned that that is not governed by a market price; but I should [fol. 216] have added that in our sales to distributors there definitely is a market price with which they must compete with independent manufacturing companies.

In my earlier testimony I said that of our total cost of apparatus and equipment sold, about 10% was represented by labor in our shops. On the same basis, material would run between 9% and 10%. In addition to this, which is just material and labor in the shop, are expenses for overheads in the shops, installation costs, development costs, merchandise and merchandising and distributing cost, in all of which there are expenses for salaries, but not of a

productive nature in the manufacture of the article; and there are the expenses of the staff departments in New York.

Recross-examination:

As dividends to the A. T. & T. the Western Electric Company, beginning with 1923, has paid as follows: The stock is a no par stock. We paid $10 a share in 1923; $10 a share in 1924; in 1925 $2.50 on 750,000 shares and $7.50 on 500,000 shares; in 1926 we paid $10 a share; in 1927, $2.50 on 750,000 shares and $1.50 on 3,750,000 shares. In 1927 there was a split up in the number of shares. In 1927 we paid a special dividend of $13 a share and in 1928 we paid $3 a share; in 1929 we paid $1 a share on 4,000,000 shares and $2 a share on 4,500,000 shares, $1 a share on 5,250,000 shares and a special dividend of $1 on 5,250,000 [fol. 217] shares. In 1930 we paid $1 on 5,250,000 shares and $3 on 6,000,000 shares. In 1931 we paid $1.75 on 6,000,000 shares.

In terms of total dollars the 1923 dividends and interest were $7,887,000, and our profits that year, before dividends and interest, were $10,000,000, so that we carried to surplus that year, after interest, about $2,000,000. The assets of the Company at that time were $201,000,000. The common stock was $102,000,000, current liabilities were $58,000,000 and reserves for depreciation, Employees' Benefit Fund, etc., were $41,000,000, so that the value of the stock on which the dividend was paid was approximately $102,000,000 at the end of the year. We have carried an amount of earnings to surplus in each of the years up to 1929. I can not give the amount of surplus in 1923 because capital and surplus in the amount of $77,000,000 were combined at that time, which includes undivided profits. At the end of 1933 our surplus was $18,000,000 plus the value of stock on the balance ... et. Capital stock and surplus at the end of 1933 were about $160,000,000.

Redirect examination:

No dividend was paid in 1932 or 1933. Explaining the liquidating dividend referred to in cross-examination: In 1927 we paid a special liquidating dividend to the stockholders, of $48,750,000; and that is referred to in the stockholders' report for 1927; and there it is stated that the

[fol. 218] dividend was paid out of non-Bell earnings of the Western Electric Company from 1881 up to the end of 1927. We did set up, January 1, 1927, the Products Company, to take over certain non-Bell assets from the Western Electric Company, and we accepted in exchange for those assets stock in that corporation. That was as of January 1, 1927, and at the end of 1927, when we decided to pay this dividend, we received as a dividend from the Products Company some of those profits and in turn we paid them over to the A. T. & T. in the form of a dividend, and they were non-Bell profits of the Western Electric Company.

In my statement of total return earned by the Western Electric I included those profits to the extent that any part of them were earned in the years 1916 to 1933; I did not include the whole amount because that represented earnings from the beginning of the Company. Part of that money came from the sale of some foreign properties which were discontinued by the Western Electric in 1925.

[fol. 219] Edward V. Cox, a witness of lawful age, was produced by and on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, plaintiff, and testified as follows:

Direct examination:

I am 60 years of age, reside at Plainfield, New Jersey, and am employed at 195 Broadway, New York, as Assistant Vice President of the American Telephone and Telegraph Company. I graduated from Yale University with Degree of Bachelor of Philosophy in the Department of Mechanical Engineering and Columbia University with a Degree of Electrical Engineer. I have been employed by the American Telephone and Telegraph Company since 1895 as follows: From 1895 to 1899 I was Inspector, Assistant Wire Chief and General Inspector in installing and maintaining central office and substation equipment. From 1899 to 1907 I was an Engineer in making telephone engineering studies, telephone repair shop practices and in the design and construction of telephone underground conduits. I had actual

charge of the construction of over 125 trench miles of such work. From 1907 to 1911 I was assistant to the General Superintendent of plant. From 1911 to 1919 I was Chief Accountant and General Auditor in general telephone accounting. From 1919 to 1922 I was Supply Contract Au- [fol. 220] ditor in checking prices and services of the Western Electric Company to the Associated Telephone Companies. From 1922 to date I have been Assistant Vice-President and my duties have been to audit supply contract services and assist in rendering the supply service of the Western Electric Company to the Associated Companies a maximum benefit to the operating companies. During the 39 years that I have been associated with the American Telephone and Telegraph Company I have become familiar with the manufacture, sale, installation and maintenance of telephone apparatus, equipment and outside telephone plant and particularly have I become familiar with the business relations which have existed for a number of years between the American Telephone and Telegraph Company, the Western Electric Company and the Associated Companies comprising the Bell System of which The Chesapeake and Potomac Telephone Company of Baltimore City is one.

My duties primarily have relation to two contracts, namely, the contract executed in 1882 between the American Bell Telephone Company and the Western Electric Company, and the contract under which the Associated Companies purchased their apparatus and supplies from the Western Electric Company known as the Standard Supply Contract. Under those contracts the Associated Companies are entitled to uniform prices which shall be reasonable, and they also are entitled to preferred service.

The Supply Contract comes under my immediate review [fol. 221] with respect to every change that is made in it or every ruling that is made under it. This whole line of work is the result of an arrangement between the American Company and the Associated Companies because the features that I first mentioned to which the Associated Companies are entitled under those two contracts are not ones that they can readily supervise for themselves. They are not in a position to tell if they are obtaining the most favored customer prices, or necessarily that the price is reasonable. The records are not available to them locally. In view of that fact this arrangement has been made between the As-

sociated Companies and the American Telephone Company by which the American Company undertakes to follow up these features of the contracts and I am the employe that is responsible for doing that work.

The Chesapeake and Potomac Telephone Company of Baltimore City purchases from the Western Electric Company under the terms of the Standard Supply Contract, of which I have here a copy.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-21".)

The three letters attached to the contract are for the purpose of bringing the contract up to date. This identical contract is signed by all of the Associated Companies in the Bell system, including the A. T. & T. itself. Stating generally what the Western Electric Company agrees to do under the terms of this contract: The Western Electric Company agrees to furnish by manufacture or purchase materials which the Telephone Company may require in its business as ordered by the Telephone Company. It agrees [fol. 222] to inspect such material as to engineering specifications, agrees to provide storerooms and maintain stocks of materials; it also agrees to store materials which have been returned by the Telephone Company and to reship them or repair them as desired by the Company or dispose of them. It pays transportation charges in advance as a matter of simplification in handling matters of that kind. On the part of the Telephone Company there is no obligation to purchase anything from the Western Electric Company. They merely agree, if they desire something from the Western Electric Company, to pay the price that is stipulated by the Western Electric Company.

I will explain how this contract fits in with the two contracts introduced by Mr. Crosland. Those two contracts were between A. T. & T. and the Western Electric. To make the chain complete there is a third contract which is known as the License Agreement executed between the American Company and the individual associated companies. Under that contract, the American Company agrees to do the fundamental engineering and to make the developments that are obtained through that engineering, practically available to the Associated Companies. Now, the Western Electric Company is the instrument by which the American Company makes these research results ef-

fective. The Western Electric Company, on the other hand, has this agreement for selling materials to the Telephone Company, so you have a continuous chain from the Associated Companies to the American Company, and from the American Company to the Western Electric Company, and from the Western Electric Company, in turn, back to the Associated Companies. The whole thing is in harmony with the fundamental object of giving the Associated Companies [fol. 223] the articles which they need in their business. The Western Electric Company does not manufacture to make a sale. It manufactures in accordance with the needs of the Associated Companies as primarily determined by the American Company. That is to say, the American Company, having investigated the whole field and determined standards, recommends those to the Associated Companies and the Associated Companies, in turn, select from the standards the features that are best adapted to their particular needs, and then if the Western is in a position to supply those needs, place the order on the Western Electric Company.

The Western Electric Company in selling its apparatus to the Associated Companies, puts itself in a position, as a service to the telephone companies, to sell such other features as make up a complete telephone property, that is to say the poles and cross arms or the wires, that were necessary in order to provide the circuits to work with the apparatus. In doing that they competed with other concerns that were in the same line of business, and over a period of a good many years their service and prices were such that a large part of that business was being secured by them. The telephone companies during this period had their own purchasing agents, their own supply storerooms. They would go into the market and obtain bids from a variety of suppliers, would select the price that they felt was most advantageous and give the business to those concerns. However, the Western Electric Company in that competitive market had acquired a very substantial portion of this business of supplies which they handled on a jobbing basis. By the year 1901 one of the associated companies, known as the Bell Telephone Company of Philadelphia, reviewed its whole system of obtaining supplies, and it recognized the fact that it was going out and ob- [fol. 224] taining bids, through its purchasing agents, and

after they had gotten through their work along those lines they landed up in the Western Electric Company, and the Western Electric Company was also going through a similar process. It was buying these supplies from some other concerns and they had to warehouse them. So there was a duplication. It was the business of the Western Electric Company to make the purchases. It had to do it to a large extent in its own business of obtaining raw materials, so that was a natural feature of their work. Whereas, to the Telephone Company, the purchase of spplies was incidental to giving service. The review of those features led this associated company to put before the Western Electric Company the proposition of having the Western act as a purchasing agent for the Telephone Company and take over this whole supply service.

A tentative arrangement was put through to that effect. The original arrangement was on a cost basis, the actual costs at the end of the probationary period not to be greater than the Telephone Company would have to pay on the old basis. That was put through in 1901 and it was successful. The other associated companies asked to be party to the same arrangement, and gradually by 1906 there had been quite a number of these arrangements made. At that period it was decided that these various contracts which were somewhat similar should be exactly alike and be standardized. So there was a standard form of contract drawn and that became the foundation of other contracts. The Chesapeake and Potomac Company became party to the contract in 1908, and since that time has acted under this general plan.

I would like to bring out the advantages that pertain to [fol. 225] this particular phase of the contract which supplement those that come through making this 1882 contract for the handling of the apparatus. First of all, it enabled the telephone companies to dispense with a purchasing organization and a warehousing organization, and it enabled them to very largely reduce their stocks—the Western Electric Company took over all of that. Then they no longer entered the market in competition with each other. The Western Electric Company was in a position to merge all these orders. It had exactly the same features you see today in chain store buying, the orders were pooled. The Western Electric Company, instead of having to deal

with jobbers could go direct to the mills. And there was a great elimination of expense and machinery on the part of the Telephone Company. And, on the other hand, there were reductions in prices which the Western Electric Company itself was obtaining, and the reductions were carried through to the Telephone Company on this basis.

The standardized contract of 1906 provided that these purchases should be resold to the Telephone Company at cost plus remuneration which was specified in percentages, different percentages for different lines of supplies. That ultimately proved to be burdensome because a cost-plus contract in order to permit verification must be handled in great detail. Each lot purchased by the Western Electric Company had to be disbursed at the cost-plus feature, and the Telephone Company, in ascertaining that the right price was billed had to check the whole thing, each lot purchased by itself; and as to the prices they would shift as different suppliers fulfilling a portion of the orders of the Western would deliver their goods; there would be a new price established, and all of that would have to be verified both [fol. 226] by the Western and by the associated companies. So that in 1930, the date on which this contract was executed, we had a change made with respect to that feature. That is the real basis for making this contract. Other changes largely of phrasing were adopted at the same time. The change made was of this nature, and instead of having these purchases resold on a cost-plus basis individually applicable to the lots it is all handled on the basis of general averages. In other words, the Western Electric Company now undertakes to obtain no more in the resale of these articles than it would have on the old basis. But it establishes the price and that price can remain in effect for as long as it seems desirable, whether or not it is exactly in accordance with the set-up. But the return to the Western Electric Company is the same as it would have been on the old basis. The contract is a very live document and is continually under change in relation to the growth of the business. The changes are all matters of detail and not matters of general principle.

The Chesapeake and Potomac Telephone Company of Baltimore City does not purchase all its requirements from the Western Electric Company. It does not purchase items that it is not of advantage to them to purchase. There are

a number of lines which the Western Electric Company is not in a position to make economies in, for example foods. There are large restaurants maintained by the telephone companies for the servicing of the operators. The foods for those are better obtained locally than they are through the Western Electric Company, and there is no advantage in consolidating purchases of that kind. Other items are those of special furniture that may be involved in some particular location, of building materials, sand, stone and ce- [fol. 227] ment—they are heavy and they can not be transported long distances economically. All items of that kind are purchased locally and those amount up to in the neighborhood of at least 10%. The associated company is in a position to judge for itself to what extent it goes into this direct market.

The Western Electric also sells to independent telephone companies and railroads, but it does not sell to them direct. It uses distributor companies in both the domestic and foreign fields—the domestic field is served by the Graybar Electric Company as distributor.

There are more than 3,500,000 telephone instruments on users' premises operated by independent telephone companies in the United States, which is roughly a quarter of the total business. The capital invested in independent telephone business is approximately $500,000,000 with revenues of approximately $100,000,000 a year. The independent telephone companies have more central offices in the United States than the Bell System. A number of them are quite small, but there are also exchanges of substantial size. I do know that in Maryland there are practically no independent companies operating at this time, but there are a large number of independent companies in Virginia and West Virginia.

I have prepared a statement of sales for the years 1925 to 1933 by the Western Electric Company to the Graybar Company.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-22".)

[fol. 228] The sales of Western Electric to the Graybar for resale by the Graybar run in excess of $5,000,000 a year. The Western Electric sells to Graybar on the general basis that prices shall not be lower than the prices to the associ-

ated companies. As a matter of fact, they are generally higher; the average differential being about 5%. There are, however, some exceptions for the years 1932 and 1933 during the depth of the depression.

During the time of the depth of the depression there were some special prices made in connection with lead-covered cable. At this time the manufacturers were competing for the remnant of that business, on a basis that was much below cost; and the Western Electric Company, in order to prevent the Point Breeze cable shop from shutting down, which would have been against the interests of the associated companies, it took some special orders, a total of seven in number, from the Graybar Company, for types of cable that were not just like those that are used by the associated companies, and priced those on a basis lower than the associated companies would have paid for similar cable. That price was fixed competitively. It was just sufficient to tide over this period when the cable plant was practically without orders and would have had to shut down. The total volume of those sales on seven orders was about $80,000. The competitors in general are these three: The General Cable Company, of Pittsburgh, John A. Roebling's Sons Company, of Trenton, and the American Electrical Works, of Phillipsdale, Rhode Island. They do not confine themselves to lead-covered cables. They make wire and other allied products. The price at which Graybar sells [fol. 229] material purchased from the Western Electric Company is built up by taking the cost and adding sufficient to cover expenses and to provide a profit, so that on its resales to the general trade the prices actually charged are materially higher than those which the associated companies would have to pay for identical materials.

These independent manufacturing companies in fields other than lead-covered cable are the Kellogg Switchboard and Supply Company, of Chicago; the Automatic Electric Company, of Chicago; the American Electric Company, of Chicago; he Stromberg Carlson Telephone Manufacturing Company, of Rochester, New York—there are others that are much smaller. They represent the main companies with which the Graybar Company established the market in this independent field to which I have already given an approximate volume.

It is a fact that these other companies are not able to manufacture as cheaply as Western Electric. The Western Electric, because of its volume, is in a position to have cheaper processes, and then there are savings due to the fact that the Western Electric is free of the usual commercial expenses of advertising, soliciting, bad debts, etc. The Western Electric, in view of its advantages, is really in a position to make any price within this margin of advantage to which I have referred, but that is not the policy of the Company. It is a fact that there is no other place that the associated companies can go where they can get this material as cheaply as they can from the Western Electric. In volume of sales these competing companies that I last referred to are roughly comparable to Graybar. I can not give these figures accurately because they are not [fol. 230] given in the published reports of those companies. I know also the prices charged by those companies.

The associated companies have, from time to time, acquired properties from independent companies; and in those properties there were plants that had been built by these respective independent manufacturers. Now, those switchboards have to be continued in existence until their life has been used up. They have to be expanded, perhaps. In any event, they must be maintained. And there are purchases being made in order to keep these independent properties going. Now, I am in a position to determine the prices that are actually being paid for those goods. These various suppliers furnish price lists and catalogs and discount sheets to the associated companies and to me. I know that those prices are maintained, because I have actually checked the prices against the prices which were charged at the time to those independent companies that have been purchased, that were taken over. Restating that: During the period when properties were independent, purchasers were bing made from these companies, and when these properties were acquired by the Bell Companies, their records became open to investigation. I have reviewed those records. I have seen the prices that were being charged during the period of independency, and I have compared those prices with the prices as shown by the catalogs and price lists in effect at corresponding periods. And I have ascertained in that way that the price lists were firm, that they were maintained in the actual selling of these goods, and I have often

had access to the price lists of independent telephone companies. We have a number of connecting companies. We show them courtesies of various kinds, in assisting them in emergencies and giving them advice, and they have given me the courtesy in return of looking at their purchasing records. So I know what they are actually paying at the [fol. 231] current time for materials that are being manufactured by these independent manufacturers.

For 15 years I have been constantly making a comparison of prices charged by the Western Electric to the Bell companies with those charged by other manufacturers to their customers. When I said that the four competing companies are comparable to Graybar in their volume of sales, I mean that they are individually comparable and not collectively.

Exhibit A-22 is a tabulation of the sales of the Western Electric to Graybar for 1925 to 1933, inclusive. The falling off in business illustrates the recession in business generally.

I have also prepared an exhibit showing the results of my comparison of these prices about which I have just testified.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-23".)

As a preliminary, this exhibit shows the comparisons that I have made on a large volume of telephone supplies and apparatus. There are certain items manufactured by the Western Electric Company which can not be manufactured by anyone else on account of the patents' condition. It is impossible to make comparison on those and they are eliminated. With that exception, and with the one elimination of the dial equipment, this exhibit is aimed to cover everything else. The central office strictly dial equipment is not covered by this exhibit, but the other items of telephone central office and of subscribers' station equipment is covered by [fol. 232] this exhibit. The first sheet is a summary showing the results of the studies made for the years 1925 to 1932, inclusive, one each year, and attached is the particular study for the year 1932. The scope of these studies is illustrated by that particular exhibit on pages 2 and 3. Page 3, under Column A of this tabulated statement shows the most important classes of telephone apparatus that is

sold by the Western Electric Company to the Associated Companies with the exceptions that I have mentioned.

Referring to the first page of Exhibit A-23; for the year 1925 the lowest price in general trade, which is given as 120.86%, means that if all the items that I have studied in that year had been purchased by an associated company from these general trade suppliers, the best price that they could have gotten from amongst the whole lot would have been 20% higher than the price that the Western Electric Company would have charged. In other words, the relation of the independent price to the Western Electric price is 120.86%.

The margin gradually increased until the year 1929 and then began to fall, which represents to a very considerable extent the reduction in prices which the Western Electric was giving to associated companies over those same years, and the decreasing margin, that is, the difference between the two, illustrates the rise in Western Electric prices since that time. On this first sheet again, we are dealing with fairly large figures. The volume of sales considered in 1925 was in excess of $36,000,000, representing over 1,000 of the most important items; for 1930, over $60,000,000 and 2,686 items, and in 1932, which is shown here in detail, the [fol. 233] amount involved is over $18,000,000 and covers an examination of 2,917 items which are the most important comparable items. The "general trade" price in this chart means prices charged by independent manufacturers to non-Bell concerns, such as independent telephone companies, the United States Government, railroads and telegraph companies, etc. The line on the chart entitled "Per Cent General Trade of W. E." means the per cent which the general trade price is of the Western Electric price charged to associated companies.

Further as to the first sheet of Exhibit A-23: If instead of purchasing these items of apparatus from amongst all of the group they had all been purchased from the individual companies listed, or had been purchased to the extent that comparable items could be obtained from such companies, the ratios would be as appear opposite these respective suppliers' names, and naturally, they are higher because the lowest has been picked from amongst the group and that lowest is the figure that is shown at the top of the tabulated statement. You will notice, however, what

seems to be an exception to that at the end of the sheet. You have there the Reliable Electric Company where the ratio is shown to be 105.06% for the year 1925. That is representative of the comparisons that we made for that company but that company only furnishes a few items. They just have a very specialized business and its effect is, of course, included in the major percentage obtained at the top of this column for the lowest in the general trade, but its effect is so small that it is not important. The same result will be seen in detail when we come to the examination of the study for the year 1932. Page 2 of this exhibit is the detail I used in arriving at the figures on page 3. This is representative of all the other studies that were [fol. 234] made. Illustrating the situation with the item of relays on page 3: I would like to explain what a relay is. It is an electrical switch so arranged that when the magnet is energized by an electrical current, the armature is drawn forward, and that armature moves a series of springs which are contacts, and in that way the electric current is switched, the circuits are closed, or if the contacts are separated the circuit is opened. Both the Kellogg and Stromberg-Carlson Companies make relays. They are similar to each other but different in detail. They cannot be mounted against the same strip, because the holes would have to be bored differently in order to take the connecting lugs. Tneir dimensions are different, but they perform exactly the same function and their electrical characteristics are comparable.

The Western Electric relay, which is again truly comparable in its function, differs very substantially in its detail. It happens to illustrate a cheap form of construction because it can be manufactured by just punching out a flat strip. The others require more elaborate processes, but are comparable. On the other hand, it is not possible to select from among these three relays any one you want for a particular board because it may not fit. It is not possible, in other words, if you have got a Kellogg switchboard and you want to extend that, to go out on the market and get perhaps a Western Electric item or a Stromberg-Carlson item because it won't fit the board.

They are not interchangeable mechanically and to a certain extent electrically. But I have compared them where their functions were the same and where their detail was [fol. 235] sufficiently close so that it could be said they were

substantially competing and where in every case it can be said that the Western Electric relay is as good or better than the independent articles. I have taken no chances on that point.

First of all, we find from Column B that this study includes 1,775 relays and that if these relays in the volume in which they were manufactured in the year 1932 by the Western Electric Company had been bought from the Western Electric Company, the associated companies would have paid this price shown in Column C, $2,565,000. Now, if instead of buying them from the Western they had bought from the independent trade and if it had been possible to use them interchangeably so that the lowest comparable item were selected in each case then the price would have been from the independent manufacturer, $4,149,727, which shows a relation of 161% to the Western Electric price to the associated companies. That represents the lowest in the general trade.

If we take the next group of columns, Column F to I, representing the relations for the Graybar Company we find there are only 453 of those relays that were priced by the Graybar Company and on those the ratio was 148% to the Western Electric price. If we come to the next group of columns, Columns J to M, which deal with the Kellogg Company, we find that there were 1,492 relays that were comparable and that the differential in that case was 195% of the Western Electric price, and so on for each other manufacturer.

I have not compared any Western Electric article against an article of independent manufacture unless the Western Electric is at least as good or better as to manufacture [fol. 236] and use. There are many cases where I could make comparisons that would increase these differentials if I did not observe that rule. I would like to refer to the table at the foot of the form to sum up for this exhibit; it is one summary for each manufacturer and one for the lowest in the general trade. Page 4 is an approximate method of ascertaining the results for the year 1933 by these same items of telephone apparatus. The quantities are not yet available. So I have taken the quantities that were applied to the prior exhibit shown on Sheet 3, have picked the most important items and have priced these items and weighted them with these quantities so as to get

a relation, class by class, that would apply for the year 1933, and the ratios obtained that way are shown in Column E. And if those ratios of Column E were applied to the total business that is represented by those classes in the preceding study, then you get the relation that is shown in Column H; and the total relation for all of these classes is shown at the foot of Column H; so that we find that the differential for the year 1933, taken on a tentative basis, is 36%. The independent price was 36% higher than the price of the Western Electric Company with the Bell companies.

Page 5 shows the relationship as of the spot date, January 1, 1934. I have taken a shortened list of these same classes; and the most important items in those classes; so that I am dealing now with only 151 items instead of nearly 3,000; but they are the most important, and they give a guide to the current relationship. Weighting these items with the quantities for the year 1932 brings out a [fol. 237] differential of 22%; that is to say, the independent price is 22% higher than the price to the Bell companies. On page 2 of Exhibit A-23 we have a complete description of the 1932 study, so that by reading that you will obtain a connected story of just what I have tried to tell.

I have also prepared an exhibit showing comparisons of what is known as "Step-by-Step" dial equipment.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-24".)

There are two forms of dial central office equipment. One of them is known as "Step-by-Step", and the other is referred to as the panel type. They are quite different in their operation. Exhibit A-24 deals with the "Step-by-Step" type. It happens that identical equiment can be obtained either from the Western Electric Company or from the Automatic Electric Company, so that it is possible to make a comparison here which is exact and avoid the conditions that I mentioned in connection with that other study, of not having an absolute identity of items. The only two companies that I am comparing on this exhibit are the Western Electric and the Automatic Electric, and the differentials run from 25% to more than 38% higher for the Automatic Electric than the Western Electric.

I have also prepared a study of the prices charged by the Graybar Company and its three competitors in lead covered cable in comparison with the prices charged by the Western Electric to the associated companies.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-25".)

[fol. 238] This exhibit shows the result of the studies I made of lead covered cable for the years 1925 to 1932, inclusive. It lists the years, and it shows for each year the per cent which the actual cost in the independent trade was of the Western Electric price. The only sales dealt with here are actual sales in the independent trade. There is a slight difference in treatment for the years. For the years 1925 to 1929 the sales are those of the Graybar Company only. My information as to additional sales was rather slender in those years, and the differentials of those additional sales were higher, so that if I had included other sales, the differentials would have been increased. For the years 1930, 1931 and 1932 I have included all of the data that was available to me. The detailed study for the year 1932 is shown on page 2 attached. This study includes the special cables sold by the Western Electric Company to the Graybar Company, and by the Graybar in turn at special prices, to which I previously referred. The study shows that the price of these companies to the general trade in 1932 was 98.09% of the Western Electric price to the Bell System companies. I do not have any study for the year 1933 because the information is not yet available, but the conditions would not be materially different.

I have also prepared an exhibit showing the prices that the Bell Companies paid to the Western Electric and what they would pay if the same articles had been purchased in the general trade.

(Thereupon there was offered in evidence by the Plaintiff an exhibit marked "Plaintiff's Exhibit No. A-26.")

The bottom part of page 1 lists certain Bell System com-[fol. 239] panies for the various years 1924 to 1932, and in the columns following the names of the companies I have shown the Western Electric prices, the lowest prices in the general trade, and the percent saving. The Chesapeake and Potomac Companies are shown for the year 1929. The nearest companies from the territorial standpoint are the

New York Telephone Company, studied in 1932, and the New Jersey Bell Telephone Company, studied in the year 1931. The second page gives a complete description of the study of the Chesapeake and Potomac Company. I would, however, like to refer to two features that are brought out in that description. One is the fact that all of the items considered in this study were not comparable and I had to give different treatments for the two groups. Wherever a comparable article could be obtained in the general trade, a direct comparison of the prices was made. Where items could not be compared I made the assumption that the price charged by the independent manufacturers would have been the same as the Western Electric Company's price. That is fair to the independent manufacturers because on items that we were able to compare a substantial differential was shown to exist. That is set forth here specifically in the second page of this exhibit. The detail of the study of the New York Company is similar to the one made for the Chesapeake and Potomac Company, and is fully described on page 4 of the exhibit.

I have also made a study in the form of an exhibit of prices actually paid by independent telephone companies to independent suppliers.

[fol. 240] (Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-27".)

I have been able to make these studies by reason of the taking over of independent companies by Bell companies and the opportunity given thereby to investigate the records during the independent period, and I also have figures of companies which have given me the courtesy of reviewing their records. This Exhibit A-27 is prepared along the same general lines as Exhibit A-26, but the situation is reversed. On Exhibit A-27 the actual price paid is compared with what the Western Electric would have charged a Bell Company. The list as shown on Page 1, includes the West Coast Telephone Company at Everett, Washington. Page 2 shows the method, page 3 the corporate set-up of that company, and page 4 the apparatus that was purchased and the price paid for it.

Briefly, the arrangements under which the associated companies purchase supplies from the Western Electric

which are not manufactured by Western Electric are as follows: First of all, the Bell Telephone Laboratories, working under the guidance of the American Telephone and Telegraph Company, have reviewed the requirements of the industry and have set up certain specifications governing the qualities of materials which would prove of greatest advantage to the Associated Companies. Now, these specifications are recommended for the use of the Associated Companies. The Associated Companies adopt them and purchase under them. They are furnished to the Western Electric Company and the Western Electric Company contracts for the required supplies and inspects to see that the [fol. 241] quality is actually delivered in the goods, the quality required by the specifications, and the price charged includes the cost of inspection.

In general, the independent companies have no specifications against which their purchases are made. The specifications are, if any exist at all, those of the manufacturer and in general they are less rigid, provide materials of quality that is not as high quality as that provided by the specifications of the Bell Laboratories. The manufacturer in selling under his specifications as a rule will remove from his run of the factory all items which are obviously defective but he does not inspect to see that everything conforms to even his own specifications. The result is that the actual purchase by an independent telephone company would be of a grade substantially lower than those provided by the Western Electric Company in sales to the Associated Companies.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-28".)

This exhibit takes a list of representative items of supplies which the Western Electric Company does not manufacture but sells on a jobbing basis, and it shows the prices f. o. b. Washington, which the Western Electric Company would charge the Chesapeake and Potomac Company, and it also shows the comparable delivered prices by the Graybar Electric Company, and by the American Electric Company as of the same date, the date chosen for the prices being December 31, 1933, for sheet 1 of the exhibit, and December 31, 1932, for sheet 2 of the exhibit. If the items

listed on sheet 1 had been purchased from the Graybar Electric Company during the year 1933 at the prices shown [fol. 242] in this sheet 1 the Graybar price would have been 123.42% of the actual price of the Western Electric Company. If they had been purchased from the American Electric Company the price would have been 125.79%, and if the supplies had been purchased from whichever company was lowest it would have been 120.54% of the Western Electric price. Now, in this case it is entirely feasible to take the lowest of these two because there is no inherent difficulty in using the material from these other suppliers.

The requirement for shipment by the Western Electric Company to associated companies which we endeavor to maintain is that at least 80% of the orders shall be shipped the day of the receipt of the order, or the day following. In case of an emergency the entire volume of supplies in factories and in the 20 main distributing houses throughout the country can all be poured into the point where the emergency exists. Such an emergency occurred in Maryland in the sleet storm of 1932. There was a storm that affected a portion of the Chesapeake and Potomac Company territory, went on through the territory of the Bell Telephone Company of Pennsylvania and the Bell Telephone Company of New Jersey, and of course affected the lines of the Long Lines Department of the American Telephone and Telegraph Company and various other public service companies in that general area. So far as the Chesapeake and Potomac Company was concerned the loss amounted to 5,064 poles, and of copper wire there were shipped 261,000 pounds, of iron wire 123,000 pounds, and of twisted pair wire insulated, which is the method by which circuits are restored temporarily and service given much in [fol. 243] advance of the permanent construction, 9,500,000 feet were shipped out. At the same time these deliveries were being made by truck from Washington, there was no delay at all in providing the repair forces with the supplies that were necessary, no one was held up. Less than 24 hour delivery was maintained on that, and in addition to that these other territories were also taken care of, that is to say, Pennsylvania and New Jersey. And the resources of the Western Electric Company were not taxed except in a minor degree as against conditions which have occurred at other times and in other places.

The arrangement by which the Chesapeake and Potomac Company is protected by these stocks enables it to restore service in greater rapidity than it could if it had to depend on going out on the market to obtain the supplies when the emergency occurred, and, on the other hand, the price that is charged for it is the established price. There is no increase in price due to the fact that there is an emergency service being rendered. If an express shipment is made instead of a normally freight shipment the telephone company would pay the express as they paid the freight, so that there might be an element of additional expense but as far as the Western Electric Company is concerned the prices are identically the same regardless of the emergency nature of the shipment. And that would not in general be true in times of these heavy emergencies if the company were out to make all that the traffic would bear. I have also prepared an exhibit which is a tabulation representing the results of the most severe storm which the Bell System ever had experienced, representing a loss of nearly $5,000,000.

[fol. 244] (Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-29".)

Cross-examination:

The Western Electric extends credit to the Telephone Company under the terms of the contract, to the extent that shipments made during any calendar month are covered by a statement as of the first of the next month, payable 30 days thereafter, which makes an average of 45 days credit. An article purchased on March 1st would be paid for by May 1st, which on that item would be a 60 day credit; and similarly, an article purchased on the last of the month would have a credit of 30 days, making an average of 45 days.

A great many of the articles manufactured by the Western Electric Company are patented and could not be manufactured by anyone else in that exact form. Though the basic patents on a great deal of telephone apparatus have expired the patents remaining may relate rather to details and that perhaps is one reason why different manufacturers have different details of apparatus which function to the identical end. If an independent telephone company

wants to enjoy the fruits of the A. T. & T. patent researches, they must purchase from the Western Electric through the Graybar Company, and cannot purchase them elsewhere.

Comparing Western Electric manufacture with independent manufacture, those items are not interchangeable where they relate to central office equipment, but you can replace the subscribers' instruments of the Western Electric type with the Kellogg type, and the instrument will [fol. 245] continue to function. Restricting ourselves to central office equipment, it is substantially correct to say that if an independent company makes an initial investment in a Western Electric product, it would be forced to deal with the Western Electric from then on with respect to facilities necessary to use that initial investment. But this is not true when you leave the central office equipment and come into other phases of the business.

It is the policy of the Company to maintain its price lists, and over 15 years experience I have found that policy is maintained. In the emergency in the last two years there were the seven cases which I mentioned on direct testimony, in sales of lead covered cable, that have come up the other way. Those cases, however, do not establish any policy or show any incentive on the part of Western Electric to cut prices. It is part of my duty to check to see that no such price cutting exists. If the cases in question had reached sufficient volume the matter would have come to my attention. An incidental case might escape but not a case that represented a practice. As a result of finding these cases I have made a review of the Western Electric distributor pricing, particularly in the items that were highly competitive, and satisfied myself that there has been no price cutting other than those seven cases that have been mentioned.

The Western Electric prices are dependent, to a large extent, on the volume of business. The Western Electric is still losing money, and it would take a very large increase, approximating the business of 1929, to permit the present price structure to be reduced. The volume of rebuilding The Chesapeake and Potomac Telephone Company of Balti- [fol. 246] more City would not be sufficient for this purpose. Taking all of the rate cases now pending in the country against Bell Telephone Companies through last year and this year, if all of these Companies were rebuilt under the

reproduction theory of valuation at the same time, I still do not think the volume would be sufficient to cause a reduction in prices. The volume is considerable but also the period of time for reproduction has got to be taken into consideration. It is not built in one year but would have to be carried over a series of years, perhaps 5 years.

The Graybar Electric Company was incorporated in 1925 and took over the business which the Western Electric was formerly conducting, and for two years thereafter the Graybar was owned and controlled by the Western Electric. In 1927 its common stock was indirectly acquired by employees of the Graybar Company. Its preferred stock is held by a subsidiary of the Western Electric Company. President Bloom of the Western Electric Company is a Director of the Graybar, just the same as a banker would sit on the Board of a company in which he had a very important interest. Until the preferred stock owned by the Western Electric Company is entirely liquidated, the Western Electric is interested in Graybar.

It is the policy of the Graybar Company not to solicit central office equipment business from independent telephone companies. I would not call this a courtesy to the independent companies. It is just a provision, to be perfectly certain that the Bell System is playing fair with the general business of the country. As I look at it—and I am just giving my own viewpoint, because there has been no discussion of this matter with me at all—it is this, that the Western [fol. 247] Electric Company, by virtue of its Bell System relations and volume, is in a position to undersell any independent telephone manufacturing company in the country. It could put them out of business if that was considered to be the ethical thing to do. Now, they don't want to do that, not only from fairness, but it would probably not be permitted under the Federal Trade Commission. And as a further evidence of good faith, they do not even use the Bell System manufacturing power to put a switchboard into an independent company, and thereby acquire the mastery, as you have suggested, over the extensions of that switchboard in the future. The initial installation of a certain type of switchboard tends to control the extensions of that switch board in the future. If it is a Western Electric switchboard, the Western Electric Company would have the edge on the extensions of that switchboard in the future and it cer-

tainly would have the full maintenance of the switchboard. For example, if you have a Packard car, you cannot buy Ford parts for it, and that is the situation with regard to the switchboards.

The Graybar is an independent company and it is in business to get all that it can for itself, and is owned by the employees of the company. We are not concerned with the prices they charge in their business, but are only concerned with the prices that the Western Electric Company charges the Graybar Company. Nevertheless, the Western Electric has made a condition to the Graybar that they shall not sell Western Electric switchboards to independent companies because the Western Electric Company did not do that itself during the period that it had control of Graybar Company. It is not the Graybar's volition in the matter. They do not do it because they are told they cannot do it. It does not seem fair to me to use the Bell System power to establish a situation in the independent trade which would [fol. 248] have a tendency to force independent companies to purchase from the Western Electric Company, and the Western Electric Company has left the independent companies a fairer chance to maintain their position. We think that is what the law of the land would require us to do.

The total investment in the Western Electric Company plant is about $160,000,000. Taking all of these competitors of the Western Electric Company together, I do not know how much investment they have. Their fields are individually very much restricted as against those of the Western Electric Company. The Western Electric Company covers every phase of the telephone business. The Cook Company, for example, confines itself almost exclusively just to the phase of protection equipment, some little distributing equipment, a very small and confined line. Now, its ability to manufacture economically in that line is not measured at all by the relative investment of that Company to the Western Electric Company, because the Western Electric Company's investment in the same line as Cook's may be a much closer ratio. None of them are equipped to supply the needs of the associated companies.

[fol. 249] HARRY C. GRETZ, a witness of lawful age, heretofore produced, sworn and examined on behalf of The

Chesapeake and Potomac Telephone Company of Baltimore City, Plaintiff, was recalled in that behalf, and was examined and testified as follows:

Direct examination:

As I testified before, I am General Auditor for The Chesapeake and Potomac Telephone Company of Baltimore City, the Plaintiff in this case.

I have prepared an exhibit showing the many varied units of property of the Telephone Company.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-30").

The information contained in this Exhibit A-30 is taken from the books and records of the Company maintained under my supervision and control, in the ordinary course of business. The exhibit shows a summary of the book costs of the property by individual property accounts, and the totals in this exhibit can be checked into the balance sheet shown on Exhibits A-1 and A-2 already filed. Following the summary is the supporting data for each account. This exhibit is offered to show the book cost of the property of the Company, tied in with the balance sheet already offered. It expresses in units of property the same property which has been shown in dollars on Exhibits A-1 and A-2 except for those accounts where in the Accounting Department, we just maintain a record of the dollars. It also forms the basis of the reproduction cost study to which I will later testify.

Account 200, Intangible Capital, on the first line of this [fol. 250] summary includes two items one of which represents some cost incident to the issuing of securities, such as taxes, and the other being the excess of the price paid for some telephone properties over the structural value of those properties. Under Account No. 211, I show each of the parcels of land owned by the Company, its location and general description. Under Account 212 the exhibit shows the location and description of each of the buildings. All of the large buildings which are a large majority of the buildings in this Account No. 212, were erected by the Company. To get the book cost of the buildings separate from the land, we have to, for accounting purposes, subdivide the purchase price of real estate between land and build-

ings, and we get estimates from a real estate concern or somebody who has acquired the property for us, to give us an idea of that subdivision. Under Account No. 221 is shown the book cost of central office equipment by location and type of equipment. Account No. 222 represents Furniture and Fixtures in the operating rooms, which we show on this exhibit by dollars at each location. For Account 231 and all the rest of the accounts in the binder, are shown the units of property. Under Account 231 we show for the station apparatus, the number of stations that are operated from manual, magneto or dial offices, and then the type of station, that is whether they are handsets or coin collectors or other, the last being very largely the desk stand type. Under station installations Account 232, we show the total number of units. This account includes principally the labor of installing stations in place but it also includes the wire that connects the apparatus back to the point where the drop wire reaches the house. For block wires, Account 233, are shown the units which are few in number.

[fol. 251] Account No. 234, Private Branch Exchanges, is subdivided into two types, the smaller or non-multiple type and the larger or multiple type, which correspond to the smaller of the central office equipment installations. In the group of non-multiple type we show the number of units and the group of multiple type we show the dollars by location as is done with central office equipment. Account No. 235 covers the booths that we have in service.

The next group of accounts are what we refer to as our outside plant accounts, and consists of poles, cable, wire, conduits, consisting of large quantities of property. Take exchange pole lines, we keep that account subdivided by the types of items included in the account and then the size or capacity, for instance, poles are reported by the length of the poles. We also show separately here the percentage of ownership in property jointly owned with other parties such as an electric light company or the A. T. & T.

On our records we subdivide the units by tax districts, and one of the purposes of this record is to have our quantities by taxing districts so that we can readily furnish the assessors with the amount of property that we have, or we can use it for checking assessments in case they make the assessment, without regard to the units of property. The

units shown in this exhibit are a summarization of the records maintained by tax districts.

The next group of accounts are the aerial cable accounts and there we keep our cables showing the number of pairs and the size of the wire in cable. They run into a large number of different combinations of pairs and sizes of wire. In the aerial wire account, we do not have as many different sizes as we do in the cable, but still there are quite a few items there. In underground conduit account we have that [fol. 252] subdivided between manholes and conduits, and conduit by the number of ducts and by the kind of the conduit, that is, whether it is creosoted wood or iron pipe or terra cotta. Underground cable is of the same general type as the aerial cable and the same is true for submarine cable.

I have also prepared in the form of an exhibit the result of an appraisal made by the Company as of December 31, 1932, which iincludes the total property of the Company in the State of Maryland, with one or two minor exceptions of property not devoted to telephone service. (Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff"s Exhibit No. A-31"). This exhibit is an estimate of the reproduction cost new and of reproduction cost less depreciation, of the property as of December 31, 1932. I have taken, from statements furnished to me by other witnesses, the present condition of the property and have applied that to the reproduction cost new, and thereby get the reproduction cost new less depreciation. The land in this exhibit is included at the amount stipulated, and the buildings are included at the amounts appearing in Plaintiff's Exhibit A-9. The remainder of this estimate of reproduction cost is the result of the joint work of myself and the Chief Engineer of the Company, including certain studies made by Mr. Sloan, a Consulting Engineer. In this exhibit, for property other than land and buildings, we have grouped the items into three general classes. The first group, Central Office Telephone Equipment and Multiple P. B. X. Equipment; the second group, Station Equipment; and the third group is what we call Outside Plant and which is composed of pole line, aerial cable, underground conduit and underground and submarine cables.

[fol. 253] Taking up the Outside Plant Account first, and referring back to the previous Exhibit A-30, there is an enormous amount of different items when we take into con-

sideration the size and capacity of each item. In all, there are slightly over a thousand different items. A complete engineering appraisal would require us to develop a unit cost for each one of those thousand units of property. Such an appraisal was made in 1923, and we have used the unit cost in that appraisal as test unit cost for the purpose of appraising the property today.

The first thing I did was to take the total current units of property as of December 31, 1932, and price them out at the 1923 unit costs. From this tabulation of the 1932 units of property at 1923 costs, we picked out the principal items. The selection of these principal items was more or less automatic. We took the kinds of material that are included in each account and saw to it that our list of principal items had some of each one of those classes of property.

Referring to the detail sheets for pole lines, Account No. 241, on Exhibit A-30, we see the kind of material that is included in the Pole Line Account. We have poles, guy stubs and push braces, which are all poles; then we have guys, anchor guys and other guys; we also have cross-arms and back braces and guard arms. These are the types of items included in this Pole Line Account.

Now, in our selection of the principal items for pole lines, we took poles, guys, cross-arms, but did not bother with these back braces and guard arms which are relatively small in amount. As the next step in selection, having decided the kinds of material that we were going to include in our sample of principal items, we determined in each one of those headings the items which gave us the largest volume measured in dollars at these 1923 prices. You can see at a glance in this Pole Line Account, 25 foot, [fol. 254] 30 foot and 35 foot poles stand out as predominating in this account, and they were the three items of poles that we have placed in our sample items.

When we get down to guys at the bottom of the first page, we see anchor guys and the 6 M, or 6,000 pound strand guy, is the predominating item there. In the item of Other Guys the 6,000 pound strand guy is also predominating. In cross arms the 10 pin cross arm is predominating. That was the method of selecting the principal items in that account. These principal items are the ones carried into our calculations on page 8 of Exhibit A-31. Generally speak-

ing, the method I have just described was followed in the selection of the principal items in all the Outside Plant Accounts. The selection was almost automatic. We took the principal items of each type that are accounted for under a given account. I selected these principal items, gave them to the Chief Engineer, and he made an appraisal of those items at current reproduction cost wholesale, that is, assuming a single impulse reproduction of the entire property. The Chief Engineer will testify to this method of arriving at those current costs for those particular items.

Still referring to page 8 of Exhibit A-31, the Chief Engineer developed unit costs for each one of the six items in the pole account. The columns of major material, other material, direct labor, and miscellaneous expense, and the inclusion of certain items like exempt material, supply expense, supervision and tool expense were all the result of the Chief Engineer's appraisal. He priced out the quantities we had in December, 1932, at the 1932 costs. The total cost in place of the principal items for the quantities in the plant in December, 1932, at 1932 costs but exclusive of the undistributed construction costs is shown on line 17 (of Exhibit A-31, page 8) as $4,073,000. All through this ex-
[fol. 255] planation of directly distributed cost there is nothing included for undistributed construction costs, and they will be treated separately after we get through with the direct costs.

Here is where we bring into play the 1923 cost calculation. We had already taken the 1932 total units of these 1,000 items and had priced them out at the 1923 unit costs. We had both the principal items at the 1923 costs and the total items at the 1923 costs. We obtained then the ratio of the total items at 1923 costs to the principal items at 1923 costs. That ratio which in the case of pole lines was 121.08%, shown on line 18, was applied to the total dollars of the principal items at 1932 costs which amounted to $4,073,000, and arrived at the amount of $4,931,000 as the reproduction cost of all the items in the Pole Line Account.

The figure of 121.08% is the ratio of the value in dollars of the total units of property, as compared to the principal items, both total units and principal items having been priced out at the 1923 unit cost. The first operation was to take the December, 1932 units of property and price them

out at the 1923 unit cost, which gives the aggregate amount of $5,503,000. For that we used the 1923 unit costs from the 1923 engineering appraisal, applied to the total of the 1932 units.

Explaining further about these 1932 unit costs, which were used solely for the determination of the ratio mentioned, it was not necessary, nor is it necessary in this type of study, to take unit costs as of any specific date. It is necessary for this type of study to have what we call test unit costs; that is, unit costs for all items of property. The Court in the 1923 case, decided in 1925, gave their value for the property in toto. I could have used that, had it been broken down by accounts, and for each unit of property. But that was not done though the evidence that we [fol. 256] had offered had broken it down by the individual items. It does not matter for a series of test unit costs whether they are at high prices, or whether they are at low prices, if those test unit costs, as between the principal items and the other items, are all on the same cost levels. That is the only requirement for a series of test unit costs. Of course, it is preferable to get the test unit costs as close to the current appraisal date as it is possible to get them. 1923 was the only complete test unit cost that we did have available; and in our judgment they met the test of all of the items, being in proper relation to each other as far as costs were concerned.

Having arrived at the figure of $5,503,000 for all of the 1932 units at 1923 costs, we then took up the principal items, at 1923 costs which gave us the figure of $4,545,000. It is the ratio between those two figures that establishes the percentage of 121.08 to which I referred. The use of this ratio eliminated the laborious and expensive method of determining reproduction unit cost for all of the items. The unit costs of the 1923 engineering appraisal were only used to ascertain the ratio between the principal items and the total of all the items. Having gotten the 1932 reproduction cost for the principal items we wanted to find out what would be the 1932 reproduction cost for all of the items and and in order to do that we found out what was the relation in value in 1923 between the same principal items and the total items, and applied that ratio to the 1932 reproduction cost of the principal items.

We made tests to ascertain that the ratio of the principal items to the total items in the Outside Plant was reasonable. We did not have these tests available at the time of the case before the Commission, but after the Commission [fol. 257] case we conducted a test by using the unit cost which Mr. Sloan, the Consulting Engineer, had offered in the 1923 case, and we went through the job of pricing out all of those units at Mr. Sloan's 1923 figures, and found some slight variations in each account which we would expect, but in the aggregate the total amounts for all of the outside accounts in 1932, using Mr. Sloan's unit cost as test units, was $20,554,000; and the results that we had previously obtained by using Mr. Robinson's unit cost were $20,532,000, which is a difference of one-tenth of one per cent.

We could have used any set of unit costs that fulfilled the only requirement needed for test unit costs, and that is that all of the items are in proper relation one to another, that they were all priced out at the same current cost levels. We wanted to value the property anew as of December 31, 1932, and our method was a pricing of representative major portions of the property according to price levels obtaining December 31, 1932. It is not complicated by anything in the way of trending of prices from 1923 to 1932, but it is just as if the whole plant would be conceived to have been rebuilt on December 31, 1932, at prices then prevailing. In the Pole Line Account we took six items out of a total of 30, and in those six items we get 82.59% of the total account, because the items that we selected were the most important items in the account. In the total of the outside plant accounts, out of 1,010 items, we use as our principal items fifty-six, which accounted for 74% of the total. The percent of the total varied by the different accounts. Take an account like underground and submarine cable: we had over 500 items in that account. We selected 17 items and obtained 64%. Now, to get another 2% or 3% it might involve taking the next ten or fifteen items. In each case we have taken the principal items which con- [fol. 258] stitute a majority of the account. In the case of wire the principal items, four out of twenty, actually amounted to 95% of the total account.

Summing up what we did, we picked out the principal or controlling items in each account, Mr. Speer (the Chief En-

gineer) priced these at the reproduction cost new as of December 31, 1932, and we converted such reproduction cost new of the principal items into reproduction cost new of the total account. The result of this work appears on pages 8 to 12 of Exhibit A-31, and is also summarized by accounts on the first sheet of the Exhibit.

Coming to the Station Equipment, we were not able to follow the same method there, because our current records do not record the quantities by the different types of apparatus that go to make up this account. Referring back to A-30, it will be noticed under Accounts 231, 232, 233, 234 and 235 that we just have the quantities by very general classification. The Station Apparatus Accounts cover the telephones and the bell boxes and things like that that are on the premises of the subscriber. There are a lot of small items, of relatively small amounts, that have a rather rapid turn-over, and the cost of keeping detailed inventory records of the various types would be prohibitive; so that we just keep the total number of telephones subdivided between those of the hand set type and those of the desk stand type and the number of coin collectors. Therefore, we could not follow the same detailed pricing out of all of the units and of the principal units in the station equipment as was done for the Outside Plant Accounts.

Referring to page 6 of Exhibit A-31: The first three columns give an analysis of the book cost beginning with 1923, the gross additions and the retirements separately for each year from 1924 through 1932. It is this dollar record which we wanted to equate or adjust or translate into [fol. 259] terms of 1932 reproduction costs at wholesale. In 1923 we had had a detailed inventory and appraisal at that time, and for this account that amounted, exclusive of undistributed construction costs, to $3,473,000 as shown on Column D at line 1. At that same time, the books, including the undistributed construction costs, amounted to $3,550,259 as shown in Column C, line 2.

We took the principal items out of that appraisal of 1923, appraised those principal items at 1932 cost and got what might be called an index number or a translator, as shown in Column E, line 1, which will express the 1923 appraisal in terms of 1932 costs. There, again, it doesn't matter whether that 1923 was at a high level or a low level or a medium level, just so long as all of the items in the

appraisal were at the same level. There, again, that is used merely for test unit purposes. The reason for this may be better understoood by an illustration. Let us assume that an article was included in the 1923 appraisal at $10.00, and we determine at the present time that the price is $7.50. The ratio between $10.00 and $7.50 would give us a translator of 75%. Now, let us assume that that item might have been included in a test unit cost at $5.00, but at the present time it is still $7.50. The translator in that case would be 150. Now, that same thing would apply to each one of the items. If each one of the items in there are on the level of the $10.00 for the first item, then the composite translator will be 75. If each one of them in the appraisal were at the $5.00 level, the translator would be 150. So, as I say, the only requirement for these tests units is that all of the items in the test units are on the same price level. [fol. 260] That is so, because in making the computations, everything is related to the December 31, 1932 reproduction cost. Having developed the translator of 91.9 for these principal items, and having a starting point of $3,473,000, we applied that and arrived at $3,192,226, which is shown in Column I and represents all the station equipment in existence as of December, 1923 in terms of December, 1932 unit cost.

Now, in our current accounting practice we develop at the beginning of each year what we call retirement unit costs, and they are in themselves test unit costs, because they are unit costs which, if multiplied by all of the units of property, will equate to the total book cost. In other words, we had so many dollars for a hand set instrument and so many dollars for a coin collector and so many dollars for a booth and other items included in this station equipment account. So that the retirements for any one year have a direct relation to our book cost at the beginning of the year.

The retirements that are shown on line 3, Column B, for the year 1924 at $479,000, represent the price levels that are included in the books at the beginning of that year. Similarly, the retirements for 1925 of $554,000 represents the level of prices that are included in the book cost at the end of the previous year. In other words, that $554,000 is on the same price level as the $3,931,122 in Column C, line

3, because the actual pricing out of retirements during any one year is based on the unit costs obtained from the accumulated book costs at the beginning of the year. We did not use the 91.9 cost translator in Column E, because that is the relation of the appraisal in 1923 to the same property expressed in terms of 1932 cost. What we did was to develop from the relationship of that $3,192,000 Column 1, line 1, to the $3,550,000 Column C, line 2, a translator of [fol. 261] 89.9 which we applied to the retirements for 1924 in Column B, line 3.

Another way of expressing that is the $479,000 of retirements in 1924 being based on $3,550,000 in the books at the beginning of that year would have been $431,221 as shown in Column H if the books had shown at the beginning of that year $3,192,000, which is what we now appraise it at, at December, 1932, prices.

These are in general, the methods which we used in developing a translator for gross additions and a translator for retirements. This was done not only for the year 1923 but for all the intermediate years to the end. In each case so far as the appraisal is concerned we were dealing with figures representing reproduction cost, exclusive of undistributed costs. These translators cannot in themselves be taken as absolute price trends. The translator for the retirements automatically excludes out of the book retirements the undistributed construction costs that are in there, but in the case of the gross additions translator, which was developed by pricing out the principal items, we do not apply that to the gross addition dollars as actually appearing on the books, but on a less amount of dollars after we had extracted the undistributed costs that had actually been charged out on the books.

Now, referring to the exhibit, Column A, line 3, for the year 1924, it shows that we actually included in our books $860,000 for property placed in that year. Taking out the undistributed construction costs left $784,000 as in Column D as the directly distributed cost in that year, and we applied the translator of 87.3 to the $784,000 and arrived [fol. 262] at the amount shown in Column G of $684,000.

Since the base is exclusive of undistributed costs, then the result is exclusive of undistributed costs: The first three columns, represent the accumulations at cost levels during past years, while the last three columns are all ex-

pressed in terms of December, 1932 cost levels and without undistributed construction costs.

By restating the books during that period we arrive at the end of the period with $6,018,825, which is the last amount on the exhibit, Column I, line 12, and that is the reproduction cost of the property as of December, 1932 at December, 1932 wholesale reproduction cost.

One of the problems was to get rid of the so-called overheads in construction, and the other problem was to get from the levels of prices at which this property is included in the book costs to the level of prices as of December, 1932. Illustrating from page 7 of Exhibit A-31; we take here an itemization of the quantities added in the year 1931. Under station apparatus we list different types of apparatus. We have 6,117 manual desk stands placed in that year. Now, the principal types of desk stands that we were using were the 20 AL. and 40 AL. these being code numbers representing types of equipment. There were, however, other types of desk stands which were used, but for sample purposes and because they were the predominating types that were being used that year, we used the unit price for these principal types, on station apparatus material only, with no labor in that account. Now, the average unit price that year was $2.50 and the unit price at December 1932 was $2.50, there having been no change in the Western Electric Company's price between 1931 and 1932 on this type of material.

Going down to line 4, page 7, we have dials. Now, the [fol. 263] type in use at that time was a 2 AB. In 1931 that was $3.45 and at December 30, 1932, it was $3.55. By taking the quantities of each of these items that were installed that year and pricing them out at the average price at which they actually went on our books in 1931, we arrived at the amount shown in Column C on line 16 of $546,196. These same items at December, 1932 prices amounted to $554,000. That is for the group of station apparatus. The smaller or non-multiple PBX's, at 1931 average prices amounted to $106,000, and at 1932 prices, $108,000. Booths are shown as $100,000 at 1931 prices and $94,000 at 1932 prices. There is some wire and minor material included in the installation account, $26,201 at 1931 prices and $23,735 at 1932 prices. Then there is an amount

of exempt supplies, small supplies that we do not actually disburse, tape and tacks and things of that nature which would cost more to account for than the items are worth. They amounted, during the year 1931, to 5.94% of the supplies that were disbursed, so we take that into consideration. We take into consideration the actual supply expense which is the cost of runnng the warehouse, amounting, during the year, to 3.76%. In our appraisal, Mr. Speer put that in at 3%. Then we take the labor costs, the cost of placing the station apparatus, the inside wire and interior block wires. There were 38,531 units placed in that year, averaging in 1931 $3.00 apiece. Mr. Speer has appraised them under the wholesale reproduction theory, at $2.37 apiece, and that, priced out, is included in the 1932 column. When we get down to the grand total, we find that the actual cost of the additions in 1931 for these principal items amounted to $1,042,000, but that they could [fol. 264] be replaced at December, 1932 prices at $989,000, that last figure being 94.9% of the first figure.

We can tie back to the preceding page, page 6. The total gross additions in that year amounted to $1,554,000, so that the sample that we used of $1,042,000 represented about two-thirds of the total account. The translator for the sample 94.9, is shown in Column E and the final gross additions at 1932 costs but exclusive of undistributed construction costs, are shown in Column G as $1,407,391. The sampling and pricing process was carried out for each year for the gross additions and page 7 of Exhibit A-31 is illustrative of the sheets for each year.

We get the translator for the retirement by relating $3,192,000, which is line 1 of Column I, page 6 of Exhibit A-31, with the $3,550,000, which is Column C, as of the same date. In other words, at the beginning of the year, instead of having $3,550,000 on our books, in our re-set-up of those books to express all the transactions in December, 1932, levels, we did start out with $3,192,000, and the ratio there is 89.1 percent. Now, that percentage which is applied to the actual retirements in Column B gives us the retirements shown in Column H. This process was repeated for each year's retirements and a ratio developed for each year. This ratio or translator automatically corrected for undistributed construction costs and

produced a reproduction cost of the retirements at December 1932 prices at wholesale.

By eliminating the retirements from the accumulations in Column I, our final figure then reflects the reproduction cost new, exclusive of undistributed construction costs, of all the property in the Station Equipment Accounts No. 231 to No. 235, except in multiple private branch exchanges. This [fol. 265] accumulation of $6,018,825 is carried into the summary on page 1 of Exhibit A-31 in line 5, Column A.

Explaining the process followed in connection with the Central Office Equipment Account, appearing on page 3 of Exhibit A-31: In Exhibit A-30, Account 221, there is shown a record of the dollars of central office equipment accumulated on the books for each exchange by location. The Engineering Department keeps a detailed breakdown of this equipment in support of the books, and one purpose for which that is used is to make retirements at original cost, as required by the accounting practices of the Interstate Commerce Commission. Because this data is available for the determination of actual costs of retirements, it is possible for us to take the retirements and trace them back to the year of placement. That is one thing we could not do in the station equipment group of accounts, and we did not have to do it for the outside plant accounts, because for the outside plant accounts we had a complete inventory as of December 31, 1932.

It would be possible to go out and count each one of the thousands and thousands of items of hundreds of different types that go to make up central office equipment, but we did not believe that that was necessary, and determined to use the index basis for arriving at the reproduction cost of this account. Starting with the dollars as shown by the Exhibit A-30, for each location, we broke those dollars down to the year of placement back to 1923, all of the retirements that were placed prior to 1924 being kept in one group. Since we had a detailed appraisal in 1923, it was not necessary to go back of 1923.

Column A, line 12, shows for Account 221 $11,543,000. That is included in two amounts in the summary on Ex- [fol. 266] hibit A-30, $7,995,000 for manual and $3,547,000 for dial. The book records of Account 221 shows the amounts for each one of the locations. We subdivided that total book cost back to the year of placement, and it shows

that we had $4,650, 259 property now in service which was on our books at December, 1923. We also took these retirements by offices that were made and took those out of the 1923 appraisal at the same cost levels. In correcting the books for retirements they are corrected on the basis of actual costs, and when we corrected the 1923 appraisal, we corrected it at the price at which the retirements were included in that appraisal.

The problem then is to equate the book costs of 1923 and the additions year by year since 1923 into terms of 1932 cost levels under a reproduction program on a wholesale basis, and that was the job of the Chief Engineer. Mr. Speer grouped his offices into five groups, the large manual offices, the dial offices, the small manual offices, the magneto offices, and toll terminal equipment. He will explain in detail how he arrived at the ratio of prices for each one of these periods to December, 1932. His index numbers were given to me and actually worked out through each one of these five groups, and I have summarized them on this exhibit, page 3.

We applied the translators in Column C to the total dollars (Column A) and arrived at dollars (Column D) which still include the undistributed construction costs. We took out those undistributed construction costs by dividing the amounts in Column D by 100% plus the percentage of undistributed construction costs actually charged out that year. The difference between Column D and Column E represents the undistributed construction cost after the index numbers have been applied. No, the final results show that the present book cost of $11,543,000, which in- [fol. 267] cludes undistributed construction costs, could be replaced at 1932 cost levels for $9,516,000, exclusive of undistributed construction costs. So far, the application of the index numbers to the book dollars has taken into consideration replacing the plant in the same manner in which it went in, except for the difference in price. We do make additions to offices which presumably cost more than if the total office was buil. complete at one time. The Chief Engineer made studies to determine how much excess cost was in piecemeal construction, and he furnished me with the figure of $547,000, which I have deducted on line 13. In the station equipment accounts the method followed automatically took up the correction for piecemeal construc-

tion but in treating the central office equipment account the Chief Engineer found it more practcable to develop his index numbers for the plant as it went in and to make a separate study for the piecemeal factor. This piecemeal construction factor was necessary because in the regular course of business additions may be made on a piecemeal basis while in ascertaining the reproduction cost of our property we were proceeding on a wholesale construction or single impulse basis.

Mr. Speer classified each one of the central offices to one of five different classifications. One of those classifications was the large manual type. They are mostly located in Baltimore City. Having decided that Vernon was typical of the offices in that group, he took the principal items of equipment in Vernon, and priced those out at prices used in the 1923 appraisal, and at prices in effect at December in each year after that. To obtain a weighted index number he took the quantities, first at December, 1923, for those principal items and by comparing his total dollars at December 1923 with the total dollars at the end of the next year (1924), he obtained the index number [fol. 268] for that year (1924). To give effect to changes which might come in during the meantime, he took the units at the end of the next year (1925) and he priced those out at the beginning and end of the year, and got in each case a ratio of prices at the end of the year to prices at the beginning of the year, and out of those he constructed what is known as a chain index. But after that chain index is developed, it places the cost at each one of these years in terms of 1932 cost. The index as such carries no corrective factor but is used merely to translate the costs of one level into the costs of another level.

Mr. Speer got for each group a series of index numbers similar to what I show in Column D, except that those are composites of all five groups of indices. It was not necessary to develop any index number for retirements, because it was possible in this case to take the dollars out of our book cost at year of placement, and use the dollars according to the year of placement, and the index number that he obtained was then applicable to those dollars spent in each one of those years. This method could not be used for other accounts, such as the station equipment accounts, because in that case we did not know the

year of placement of the dollars. The book records for station equipment and for central office equipment are kept on an entirely different basis. We tried to fit the data available to the problem of ascertaining a reasonable reproduction cost new of the property. The data available was more or less controlling as to the method to be followed as to any account or group of accounts. The method used for the central office equipment account was also used for multiple private branch exchanges which is a type of equipment similar to the central office equipment as I explained in connection with Exhibit A-30.

[fol. 269] Explaining the necessity for this correction for piecemeal construction and the difference between reproducing the property as a whole and the ordinary day-by-day construction, to show its effect on the different items of the property: In the case of central office equipment, a brand new office might be built and at that time it is the equivalent of a wholesale reproduction job. As growth enters into the picture and we make extensions in that property, the material added will still be there in case we make a reproduction estimate of that job, but the labor actually cost us more than if those additions had been added when the board was first being installed. For that reason we have the correction here for piecemeal out of the gross construction that was added from the year 1924 through 1932. However, in the station equipment accounts, we showed at page 7, Exhibit A-31, that Mr. Speer had appraised the installations at $2.37 apiece, and we show in 1931 they were actually costing us $3.00. In that connection we were assuming that we were replacing the entire property at one time, though over a period of years, and that there would be certain savings in labor by making that a wholesale reproduction. I have included a sheet (page 5) in this exhibit which accomplishes two purposes. It not only shows the derivation of the percentages which have been used in the appraisal, but it also shows that the reproduction has been treated on a wholesale basis. It takes our actual experience for the years 1930, 1931 and 1932, and expresses the relative amounts for each of several items that we include in this reproduction appraisal. And it also developed some percentages which were used in connection with the outside plant and the station equipment accounts, those percentages for exempt supplies, and supply expense, and for super-

vision and for tool expense. Supplies classified as "exempt" are items such as nails, tape, screws, tacks and [fol. 270] other like items, and individually are of small value. To account for these materials and disburse them to each specific job would be an enormous cost accounting job. So for accounting purposes we pick out these classes of small materials and the people who use them do not have to account for them to specific jobs which has to be done for all other material disbursed. Now, actually during the period of 1930, 1931 and 1932 we disbursed $4,750,000 worth of items. Those small items of material that were used but not specifically disbursed for accounting purposes, amounted to $266,000. Now, the ratio of one to the other is 5.61%, shown in the third column, headed "Actual". Mr. Speer ran that back to 5.5% in the appraisal.

The appraisal, of course, has all material equated to 1932 prices. We have approximately equated to 1932 prices the material disbursed in this three-year period, at $4,903,000. That is shown on line 4, and is comparable to line 3, except for the different price level. One thing that was taken into consideration there was the increase in Western Electric prices that have been testified to. Supply expense at $189,000 actually costs us 3.86% of the material, and Mr. Speer will state how he arrived at 3%. But that is on a wholesale reproduction basis, and one of the big savings comes in labor item; taking the labor by accounts in its relation to the property we placed in these three years, it would have cost us $1,946,000 on the wholesale basis, but actually cost us $2,450,000. The plant supervision and tool expense, taken collectively, 7.8% and 4.9% or 12.7% were used in the appraisal at the round figures of 8% and 4%. The miscellaneous expense of $651,000 was actually included in the appraisal at $371,000. These are some of the things that we give up in appraising this property at wholesale. But one other thing that does come back to [fol. 271] us as a large item is this interest during construction, and that is an offset to this saving on piecemeal construction, because if you are going to have it all in large items and not in small items, you are bound to tie your money up for longer periods, taking the aggregate amount of the money, and that will accumulate interest during construction to an amount greater than we actually experience in our books.

Page 13 of Exhibit A-31 shows certain amounts for the directly distributed costs for properties specifically appraised, contingencies, engineering, administration and legal expenses, and the derivation of two items of insurance and taxes and another item of interest during construction.

After we had worked up our directly distributed cost and Mr. Speer had determined what amount to include for contingencies and engineering and administration and legal expenses, Mr. Sloan was asked to determine the proper amount to be included for insurance and taxes and interest during construction. The program that we gave him to work on amounted to $43,299,321. From that amount of construction under a reconstruction program, which he will explain, Mr. Sloan determined the amount of insurance and taxes to be $543,032. All of that item will apear in Plaintiff's Exhibit A-35. He also determined that the amount of interest during construction would be $2,422,860, and that amount also appears in his exhibit. The result of certain stipulations in this case necessitated a few corrections, the amount of money being changed from $43,299,000 to $43,215,000. That was just before we started these hearings, and we did not ask Mr. Sloan to work those changes back through his program. Instead of that, we took the relation of insurance and taxes to the original total appearing before insurance and taxes, which is 1.25% and applied that [fol. 272] 1.25% to the revised amounts in the valuation. Similarly, we took the 5.5%, which was the ratio of his interest during construction to the total prior cost of construction and applied that per cent to the revised cost in arriving at the $2,406,587. I made the computations and carried them into page 1 of Exhibit A-31.

Referring now to the effect of the wholesale and piecemeal program of construction on the item of interest during construction, and explaining how it is handled in the Company's accounting in its day to day operations: We did not start interest during construction accounting until about 1918. The accounting rule is that any property which will be ready for service within sixty days after it is started, will not be given interest during construction treatment, but that property will be charged right into the property account. If it takes longer than sixty days to complete, we classify it to "Construction Work in Progress," and accumulate interest monthly, at the rate of 6% per annum,

on the amount of construction work in progress by particular jobs, until the job is ready for service, when the plant is charged into "Plant in Service". The amount of interest determined on that basis is the interest during construction which appears in our books.

From a practical standpoint, buildings, central office equipment, and the larger private branch exchanges, are the only items of any consequence that are given interest during construction treatment. Poles, for example are put in, wires are attached to them and we put them right in use. The same thing with cable. Occasionally we might get a toll cable job covering a considerable distance, that might take a few months to complete and then that item would carry interest during construction. The item of interest dur- [fol. 273] ing construction appearing on our books is shown on Exhibit A-2 "Interest during Construction" $337,636.69 as of December 31, 1932. Since that date interest during construction has been spread over the particular plant accounts to which it was applicable.

With regard to the contingencies, engineering, administration and legal expenses, these are shown in Column A of the first sheet of Exhibit A-31, and the amounts were furnished to me by Mr. Speer, the Chief Engineer.

The property on the first sheet of Exhibit A-31 under the heading, "Properties not specifically appraised" includes the land outside of Baltimore City which was included at the stipulated amount. With regard to the other items on this sheet, there are certain explanatory sheets attached to Exhibit A-31 on pages 14 and 15. In connection with the Right of Way Account, we did not attempt to determine a reproduction cost new of all the pole locations and the locations for conduit and things like that. We did make a study of our current costs during the three year period ended December 31, 1932, and found that they were approximately 28% higher than the cumulative average unit cost as shown by the books at that time. We know that there should be some correction there for piecemeal, and we felt that if we put the rights of way in at the book cost we had made sufficient correction for the piecemeal. We, therefore, included it at $934,220.

As to "Other Equipment of Central Offices" and "General Equipment" these consist of items having a relatively short life and we included them at 85% of the book cost as

explained on page 15 of Exhibit A-31. The figure for the item of Going Value on line 23, page 1, Exhibit A-31, was furnished to me by Mr. Sloan. Working capital is my own [fol. 274] calculation.

The percentages shown in Column B, page 1, Exhibit A-31, were furnished to me by the builders or by Mr. Sloan except in the case of Central Office Equipment which is a composite of two percentages furnished by Mr. Sloan. Column C represents the result of applying the percentages in Column B to the amount shown in Column A, which results in a total of $47,966,000 for the reproduction cost less depreciation of the total property of the Company, including Going Value and Working Capital. The amount of $40,050,000 in Column C shows the reproduction cost less depreciation of those parts of the property which have been appraised specifically, exclusive of Going Value and inclusive of Undistributed Construction Costs.

I have also prepared in the form of an exhibit a result of the study of reproduction costs of the Company's property as of December 31, 1933.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-32").

In this exhibit A-32, we followed substantially the same methods as I have described in connection with the 1932 study. For Outside Plant accounts and Station Equipment we used exactly the same method. The details of the Outside Plant accounts attached to this exhibit may show some slight difference in the quantities and in the unit costs that were developed by Mr. Speer. The difference in quantities would be in order to relate this study to the actual quantities in the property of the company as of December 31, 1933. We did deviate slightly for Central Office Equipment in that there was very little activity in that account during 1933, there being just $27,000 of gross additions and $67,000 worth of retirements, and we analyzed those gross addi- [fol. 275] tions and retirements in order to bring the previous valuation up to date. There had been no change in the price levels as between December 31, 1932 and December 31, 1933, so it was practicable to follow that method.

There has been a change in the per cent condition furnished me, both by the builders and by Mr. Sloan, so that the percent condition is slightly less in 1933 than it

was in 1932. Therefore, while all property undepreciated has gone up approximately $800,000, the additional depreciation takes back about half of that and leaves the depreciated amount about $400,000 higher in 1933 than in 1932. About $400,000 is accounted for by the increase in the item of buildings, and underground conduit account takes up most of the other half. The amounts for buildings have been taken from Exhibit A-10 as shown on page 2 of Exhibit A-32. With regard to the undistributed construction costs in Exhibit A-32, we took these at the same percentage used for the 1932 appraisal.

The item of Working Capital, is included in both studies Exhibits A-31 and A-32 at $1,615,000. I made a study for the purpose of determining the amount of working capital normally required in the conduct of the business of the Company for the years 1931, 1932 and 1933, and the figure used is an average for that period.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-33").

Explaining the first item in the study shown as Item A materials and supplies: These materials and supplies are items that are kept in our warehouse to make repairs, replacements, and extensions. There is also included the so-called "class C stock", which consists of materials returned [fol. 276] to the Western Electric Company for repairs and for reissue after repair. The materials and supplies item represents the average monthly averages during each one of the three years, and then an average of those three figures, which is shown in the last column.

The item of Cash is the average of the daily cash balances, which we have in seventy odd banks scattered throughout the State of Maryland. And those are expressed for each one of the three years, and then an average for the three-year period. Employes' working funds are petty cash advanced to employes for the payment of small bills and expense vouchers. Service rendered in advance is a determination which I have made that represents the value of service between the average date of rendering that service, and the average date of collecting for the service. Sheet 2 of this Exhibit A-33 shows the method of arriving at the average materials and supplies during the years 1931 and 1932; the same method was followed for 1933, but was not

shown on the sheet. This sheet is offered as a sample of the working sheets used in deriving the final figure. Sheet 3 shows the derivation of the figures for working cash included in the working capital item for 1931 and 1932. It shows the average of the daily balances by months for each of the two years. The same method was followed for 1933, and then the average of the three years was taken.

The amount of money we have in bank is included as necessary working capital because we are employing that amount of cash in the day-to-day operation of the business, and represents the balance we have in seventy odd banks scattered throughout the State of Maryland. The mere fact that we have the cash in bank does not show that it was [fol. 277] necessary, but the management thinks that it is necessary. We have to carry sizeable balances in banks these days if we want any service from the bank, and we draw a great many checks on the banks. Many banks make collections for us. They are performing services for us and it is my personal opinion that we are getting more than value received for the money we have in those banks. If we think that a balance is too big at any time we use the money. During 1933 we reduced some outstanding notes held by the A. T. & T. From my knowledge of the Company's methods and knowing that the payments in reduction of notes are made when cash is available, I personally believe that the amounts of cash shown are reasonable for the Company's purposes.

Employes' working funds are moneys which we turn over to certain employes in each one of the departments, out of which they pay small bills and expense items. Each one of those holders of the funds use bank accounts so that they can pay some of these bills by check. It is our general practice to make all payments, as far as practicable, by check, because we feel that the cancelled check forms a receipt. Then it is necessary for them to have certain cash on hand, not tied up in the bank, so that they can make advances to employes for expenses or reimburse employes for expenses previously made.

Nothing is included in this statement of working cash on account of funds that are frozen in deposits of banks which have been closed since the bank holiday. We had between three and four hundred thousand dollars tied up when the banks closed in Maryland, which has not yet been released.

Explaining the part of the working cash designated as Services Rendered in Advance: It is not true that subscribers pay money in advance for all their service. There is quite a lag. Charges to customers are billed monthly in [fol. 278] advance for rentals, but charges for additional local messages and for tolls are billed monthly in arrears. We have found there is a lag of 25 days on the average between the date of rendering service and the date we collect for it. This is not in dispute as the Commission has accepted the 25-day lag in their opinion in this case. Taking the lag of 25 days, I feel that the only way that you can express that in dollars is to apply it to the revenues of the Company. Let us assume that we are just starting business and we have a certain amount of cash on hand that is to carry us through this period of waiting for the subscribers to pay their bills. Now, we will have to pay our employees off several weeks before we get any money in. There are other bills that we are going to have to pay. The property which has been built and is ready for service will be devoted to the rendition of that service during that time. So that I think it is proper to consider a return on that property. Now, if we take the gross revenues, we at one time pick up the expenses and the net revenues, because the net revenues are the difference between the gross revenues and expense, and assuming that the net revenues measure the return on the property that is devoted to the service, I use the gross revenues in order to find the dollars for that service that is rendered in advance. A section of Exhibit A-33 explains in detail the method of arriving at the amount.

As to what we did when the banks closed in Maryland, we borrowed money immediately from the A. T. & T. and put it in a Washington bank. Of course, as we were using that money, initially about $125,000, we were not getting cash money in because checks drawn on Maryland banks could not be used. When all of the banks were closed we were just not making payments except so far as we could get [fol. 279] our hands on cash and then we took care of our employees first.

As to the amount of working capital allowed by the Commission, the opinion of the Commission (page 58) contains the statement that it was developed that the Company's bills for exchange service are sent out and collected in

advance. Explaining the Company's method of billing in a little more detail: We bill at intervals of 5 days during the month. A certain number of subscribers will be billed on the first of the month. Certain other ones five days later, and so forth. We have what we call staggered billing, but in each case the bill that goes out carries with it that part of the exchange service which is expressed as a rental, which may be the flat amount or the guaranteed amount in the case of measured service, covering the fiscal month in advance. Additional local messages and tolls are monthly in arrears. So far I have been speaking about the date of the bill, but it takes some little time in the Accounting Department to collect this data, put it on the bills and send the bills out. There is a lag of a few days to do that and then there is the further lag after the bills go out before we get the money in.

A bill going out on the first of the month carries a rental for the calendar month. We can assume that service averages the fifteenth day of the month in order to get the lag expressed in number of days. If it is paid before the fifteenth of the month there is an advance payment made to us, as far as that one item is concerned. Let us assume that it is paid on the tenth of the month. Then we do have an advance collection of five days for the rental charge. Taking the mid-point of the preceding month for the tolls and additional local messages at the fifteenth, there is a lag of twenty-five days right there on these items. It is the averaging of all of those things together that produces this average lag of 25 days, in spite of the fact that our [fol. 280] bills do carry part of the charges in advance. This lag is the elapsed time between the average date of rendering service and the average date of collection on the bill.

Turning to page 59 of the Commission's Opinion, the amount the Commission included for materials and supplies was $249,404, which is comparable with the figure of $205,810 on page 2 of Exhibit A-33, the difference being due to the fact that the amounts are for different periods. The amount which the Commission has excluded of more than $158,000 representing what we designate "class C stock", is comparable to my figure of $173,000 for 1931, $142,000 for 1932, and an average for the three years 1931, 1932 and 1933 of $143,000. So far as the materials and supplies are

concerned, the substantial difference between the Company's study in Exhibit A-33 and the Commission's study lies in the treatment of "class C stock". This material is the property of the Telephone Company, and is material returned to the Western Electric Company for repair and reissue on the Telephone Company's order. If the Telephone Company does not require the reissue of that property, the final disposition of it is with the Telephone Company, and if it is junked it is not included in the figure which I have put on Exhibit A-33. The only difference in principle between the "class C stock" and other materials and supplies is that the others can be used at once, whereas the "class C stock" requires repairs before it can be reissued.

The Commission, on page 60 of its Opinion, have added to the allowance for materials and supplies the sum of $487,416 which they state represents 25/365 of the $.,000,000 plus of operating expenses. In arriving at this amount, the Commission disallowed certain operating expenses, among which were depreciation expense, taxes, license contract [fol. 281] payment, and such portion of the pension fund accruals as represented the difference between the total accruals and what was actually paid out of the fund.

With reference to the disallowance by the Commission of the depreciation expense in determining working capital: The probable theory on which depreciation expense is excluded is that it is a bookkeeping entry and does not represent cash outlay. I look at it this way: that the property is devoted to service during this lag up to the time the subscriber pays for it. Now, the cash outlay was made when the property was built, and we are entitled both to a return on that property and the proportionate part of the value of that property as it is consumed in the service, so I think it is necessary to include the proper proportionate part of the depreciation and a return on the property.

Looking at the overall picture, we are now here to determine the reasonableness or unreasonableness of certain rates. In order to do that, we look into the value of the property, and we look into the operating expense, and a return on the property. Whatever the Court determines to be the proper return, plus the operating expense, together form the base for our charge for the service, and that is expressed in terms of gross revenue. The figures that we

have in here are annual figures. If there is a lag of twenty-five days before we get the money for that service and we have devoted the property and the operating expenses to the giving of that service, I think we are entitled to the full value of that service rendered during that twenty-five day period.

Illustrating, we start out at January 1st, 1934, with $50,000,000 worth of property, say, and we do not get any money in until the 25th day of January. Let us assume that we have borrowed all of the money to put into that [fol. 282] property. That interest is going on day by day on that property, and expenses have to be paid out, bills have to be met, and all of that. My way of measuring that is to take the gross revenues. It is true that theoretically we do not pay our interest bills daily. I do not assume any arbitrary return on that money. I just took the actual net earnings that the Company was receiving and assumed that that constituted a fair return. But I cannot help but feel that if we go ahead and devote all of this property, and all of the expense of running it for the whole period of twenty-five days before we can collect any money for it, that that is definitely a part of the base on which we should earn in addition to the cost or to the value of the property that is devoted to that service.

Coming back to the Commission's exclusion of depreciation expense in the calculation of Working Capital: This expense is a proper expense of the Company, which is going on all the time. The charge is made monthly and the credits to the reserve are made monthly. I do not see any reason why the depreciation expense should be deducted from operating expenses in arriving at the amount of working capital. If it is a proper operating expense, I think it ought to be taken into consideration in arriving at the amount of the working capital if the Commission's method is used.

With respect to the disallowance by the Commission of the item of License Contract Payment in arriving at working capital, I think there may be some confusion there as to the terms of payment in connection with the license contract. We pay our bills monthly, based on the revenue of the second month preceding the month in which we pay. That is merely a basis for calculating the amount of license

payments that we owe the A. T. & T. It does not mean there is a lag there of two months.

[fol. 283] The Commission also took out of the operating expense the difference between the accruals for the Pension Fund and the actual charges against the Fund, which in my opinion is not a proper disallowance. We actually pay these accruals over to the Trustee of the Pension Fund and they are a cash payment. While they are in the Pension Fund, they are accruing interest and the amount of accruals is less because of the interest accumulations. So I see no reason for getting away from the basis that the payment to the Trustee represents an actual disbursement.

I have not given any consideration in computing working capital to the fact that the Telephone Company may take time to pay its bills after it gets the use of the material, any more than I would be concerned in arriving at the value of the property with finding out whether or not all the bills have been paid. It may have some effect on the amount of cash that we have, we do not pile up money just waiting during the period for which we might delay the payment of bills. We pay them when they are due and even take cash discounts in order to make the payments as small as possible. As to what amount of working capital the Telephone Company actually uses, the balance sheet gives the status as of a single date, but you cannot point to any one item on the balance sheet or any of the books of the Company that could be designated as working capital. In the 1925 case the District Court took all of the assets except the total fixed capital and designated those as working capital. This amounted to $1,392,360, which, as I explained the first time I testified, was the portion of the Court's valuation of $36,122,912, which was represented by other assets, the amount being obtained by my checking the analysis of the figures used by the Court.

It is true that we get along with the amount of cash and [fol. 284] with the amount of material and supplies that is indicated on the balance sheet; but, after all, you get along whether your rates are proper or not. Now, you could still have the amount of cash and material and supplies and be losing money all the time. And I just do not see that that is the test of this item of working capital. What we are trying to do is to determine what the proper rates are for

the service. And what I am trying to do is to measure the value of that service that is rendered in advance of the time that we are paid for it. As far as I know, the Commission, in its Opinion, did not give any consideration to the fact that there were payments such as rents, insurance and directories paid in advance.

The District Court's finding of working capital in 1925, related to the total property, was 4.97% and was 15.5% of gross revenue, and represented $8.75 per station. The Public Service Commission, in Case No. 690, which found a valuation in 1916 as of 1914, allowed $500,000 for working capital. This was 4.14% of the book cost of the property, 14.3% of gross revenues and $5.57 per station. The Company's claim for working capital in this case, as set forth in Exhibit A-33, represents 3.23% of the property, 13% of the gross revenues, and $8.11 per station. The Commission's allowance in this case in the amount of $660,863 represents 1.32% of the book cost of the property, 5.32% of gross revenues and $3.28 per station.

[fol. 285] Cross-examination:

Referring to what you have called the balance sheet method of determining working capital and as you *as you* ask me, substracting the current liabilities from the current assets, as shown on the balance sheet on the third column of Exhibit A-2, the difference is shown for this Company between $600,000 and $700,000. This shows the liquid position of the Company such as banks are interested in, that is, their amount of cash and items which may be turned into cash and the amount of their payables but I do not know of any occasion that you have to determine working capital except in a case like this.

As to our cash account, this is used for general corporate purposes. We do not accumulate any money to pay dividends. We use the available money for the operations of the company as we go along, making temporary investments in plant or paying off some loans or things like that, and when it comes time to pay dividends we borrow money to reimburse the treasurer for these other purposes for which the cash has been used and then the company has the cash to pay dividends.

In order to carry our accounts in banks without interest, we very often have to carry a minimum deposit. Some of

the cash in banks represents funds tied up in that way but it is necessary to use banks like that in order to run the business. In some places we have commercial offices and then subscribers pay their bills there but we do not have a business office in every little town and in those cases arrangements are made with the bank and the people to pay their bills at the bank. If we did not have these bank connections throughout the State of Maryland we might have [fol. 286] to have our subscribers either to send the money into Baltimore by check or come to Baltimore to pay their bills, or we would have to open commercial offices in places where we do not now have them. Such a condition would be more expensive and less desirable from the subscriber's standpoint than to have cash in these banks. If you have $200,000 in cash at a cost of 6% a year, that is worth $12,000 and that amount could be more than eaten up in just one or two commercial offices.

Referring to "Class C Stock" which I have included in my materials and supplies and which the Commission eliminated: Prior to January 1, 1934, as part of our accounting processes the Western Electric Company passed cash to us when that material was sent back for repairs and when it was reissued the material was billed back again to us. Temporarily we had the use of the Western Electric Company's money for which we paid them 6% interest, but at all times those supplies were the property of the Company and the passing of the cash was merely a practical mechanism in connection with the accounting. On January 1, 1934, the practice of passing cash was discontinued and no cash now passes backward and forth between the companies. The amount of "Class C Stock" in 1932 was $158,000 and for the 3-year average I have used the amount of $142,000.

(Counsel for the Commission having stated in answer to a question from the Court that the limit of his criticism of this item of "Class C Stock" was the amount which was ultimately junked, the witness was asked to furnish the information. The witness continued:)

The proportion of the materials in "Class C Stock" which was junked during 1932 was 2.95% of the total. The balance was repaired and reissued.

In accordance with the request of Commission's counsel [fol. 287] I have computed the net telephone revenues ex-

pressed as a percentage of a base obtained by deducting the amount in the depreciation reserve account from the book cost. This may be compared with the figures shown on Exhibit A-5, which shows the return on the undepreciated book cost of the plant in service. The percentages I have computed in accordance with the request of Commission's Counsel are as follows: 1924, 5.93%; 1925, 7.81%; 1926, 8.43%; 1927, 7.40%; 1928, 8.09%; 1929, 8.29%; 1930, 8.10%; 1931, 8.41%; 1932, 7.10%. This shows the net telephone revenues to average plant less depreciation reserve. Referring to Exhibit A-6, which is for the year 1933, the return on the same base is 6.47% as compared with 5.15% on the undepreciated book cost. As to the stability of income and earnings of the Company from 1923 to date, I think the figures speak pretty well for themselves, but in 1932 there have been some reductions and in 1933 some further reductions.

As to present need for any large amount of capital financing, we do not have a very large construction program ahead of us this year as we see it now.

Q. (Mr. Lewin, Counsel for the Commission:) Inasmuch as both parties to this case have undertaken to present an estimate of value on the basis of index numbers, it will be interesting to know how much, in your opinion, it would cost to have made a physical inventory and appraisal of this property.

A. I think I expressed myself before the Commission, Mr. Lewin, that to take a physical inventory of the whole property and to appraise all of that property, would prob- [fol. 288] ably cost as much as $300,000 or more, and that expense would depend, to some extent, on whether you had to have it immediately or whether you could spread it out over a period of time.

(The witness continued:)

That appraisal would mean obtaining unit costs for 1,010 outside plant items instead of the 56 that we appraised, to inventory all the kinds of station apparatus on the premises of the subscriber and to develop unit costs for those, and to inventory all of the materials included in our central office equipment and to have those appraised. Appraising is the term used by engineers to estimate the cost to replace a unit. An inventory would take several months,

though the size of the force devoted to it would control the length of time that it would take.

The book cost and the units of property shown on Exhibit A-30, are kept by the Accounting Department and based primarily on reports from the workmen or foremen who report to us the units of property placed and the units of property retired. These reports are checked by the Plant Engineering forces. There might be a discrepancy between our records and an actual count of the property, but we make tests from time to time of these units, sometimes by individual tax districts, sometimes in connection with some one job or another where it is necessary to go out and actually make a check of the plant that is there. When this is done the statistical record is made to conform to the field count. We have made some substantial checks of our records since the 1923 case when the last inventory was taken. These checks have been in certain accounts but not for all accounts. Exhibit A-30 includes all the units of property which have been devoted to telephone service, though each one of these units may not be actually in use [fol. 289] 100%, that is to say, up to its full capacity.

The test that we apply in putting property on our books as a part of the total cost of property is whether it will be used for telephone service. We do not take the property out of our books until we definitely know that we are not going to use it, and that applies no matter how far in the future the use may be.

As of December 31, 1932, including tele-typewriters, we had 226,826 stations, and under our report to the Public Service Commission for 1932 we show 208,864 stations, or 9% less. At that time we had almost 20,000 stations that were left on the premises of subscribers, who had discontinued their service or who had moved away. When in the judgment of the Company there is a reasonable chance that those stations might be reconnected and put back into service, we have left them in our fixed capital account, rather than go to the expense of taking them out and bringing them back again. We are still getting a lot of use by leaving those stations in. The highest amount of stations in service we ever reported to the Public Service Commission was 221,000.

Under our so-called service wire accounting—that is, the accounting for the installation—when we remove an in-

strument we write out of our fixed capital account the installation and the drop wire or block wire, as the case might be, the apparatus would be charged off to the depreciation reserve, but these other items would be charged off to maintenance. Now, because we have accumulated some of these left-in stations in plant, our current expense has been less because of that fact. So if you want a correct picture for the approximately 20,000 left-in stations, you must go through with the appropriate accounting and correct your expense statement as well as the asset side.

We used to have a rule that discontinued stations were [fol. 290] left in for about 60 days, but that period has been extended because of the depression, and also because we were actually losing stations. We did not have any use for that material; we were not buying new material in its place. As to whether any of them have been out of use and left in place for several years, I am sure that we do not leave them in that long even under present conditions.

Referring to Exhibit A-31, which is the estimated reproduction cost new, the value of that estimate would depend in the last analysis on the prices we used for materials as of the appraisal date. We have used in this appraisal Western Electric catalogue prices, both for the items they manufacture and the items they do not manufacture, without any allowance for the decline in the materials and in the labor that goes into those articles. The items of equipment manufactured by Western Electric on the one hand and items which they do not manufacture on the other, do not have the same price trends. The prices which we have used as of December 31, 1932 are the Western Electric prices and include any increase in prices made by the Western Electric Company since the depression.

Referring to page 3 of Exhibit A-31, we made up the index numbers and the reciprocal, known as the translator, by grouping the central offices into five groups, and then we took a typical central office in each one of those groups and confined our investigation to that particular typical office in each of the groups. The Vernon Office was taken as typical of the group of large manual offices. Mr. Speer, the Chief Engineer of the Telephone Company made the selection of the typical offices. For dial offices Mr. Speer found that the A. T. & T. had made a study of the dial office at Germantown, Pa., and he made a test of it and after

[fol. 291] comparing it with our offices here in Baltimore decided in his judgment, that it would be proper to use that study.

We could have taken any one of the dial offices in Baltimore and have duplicated the work which was already done for this particular dial office by the A. T. & T. So far as the other groups of central offices were concerned we could have taken any one which was typical and was a reasonable cross-section of all of the others. All of these offices in the same group have the same general kinds of material, maybe in different quantities or in different combinations. We went pretty far in breaking this account down into five groups.

Mr. Speer and I worked the index numbers out jointly for the purposes of this case before the Commission. And to the extent that we went back as far as 1923, we made them up retroactively and not concurrently with the expenditures. We used people who are entirely familiar with our records, and the same set of people made the study for each one of the years. As to whether there was a much greater chance of error in preparing index numbers retractively and relying on past recollections recorded I would not admit that for a minute. There is quite an advantage in having one group of people make a study to cover a series of years. It is very important in the development and use of index numbers that there is a complete understanding between the man that makes them and the man that uses them. You do not get that advantage if a man makes them up in 1923 and someone comes along in 1932 to use them and has no knowledge except a general superficial knowledge of what was in the other man's mind when he made them up. Our old records show [fol. 292] the quantities of materials, classes of materials and prices applicable to them. We have both the price records and the actual cost records for property that was placed.

In making the study of indices for central office equipment (Exhibit A-31, page 3), all the offices were placed in five groups and then we studied one office in each group which we considered typical of the group. All of the offices are of the same general character and the equipment is made up of the same kinds of apparatus. The proportions may vary as between offices but the largest variation is in

size. The variation as between the different kinds of material that go to make up the equipment cannot be so great.

In the large manual type group we studied 80% of the typical office and it is our feeling that we therefore studied 80% of all the equipment in the whole group. It might be said that the Vernon Exchange only represented 10% of the group, and therefore instead of studying 80%, we only studied 8%. On such a basis of making the calculation, we studied 20% of the total dial equipment and on the same basis in the small common battery group we studied 6.6%; for the magneto, we studied 1%; and for the toll equipment 18%. In addition to Western Electric material prices we used Western Electric labor prices in computing central office equipment.

Referring to Exhibit A-31, page 3, Column B shows the index figures for central office equipment for each year, and shows the trend of values for central office equipment from 1923 to 1932 expressed in terms of 1932 costs. The 1923 index number represents the proper proportion of the figures given by Mr. Robinson in the 1923-25 case to the cost of reproducing that equipment in December 1933. I cannot agree that the Robinson appraisal in 1923 is a very high appraisal. However, whatever the appraisal was the figure of 134.5 is the proper index number in relation to December 1932.

[fol. 293] With reference to the station apparatus for the year 1927 on page 6 of Exhibit A-31, for which the index figure of 106.9 is given, there was a peculiar condition there which I will explain. This represented instruments which prior to that time had been furnished to us by the A. T. & T. under the agreement previously mentioned, and in that year we took them over. By instruments I mean the receiver, transmitter and induction coil, which are the working parts of the ordinary telephone. The American Company billed those to us at a depreciated value, and under our accounting classification from the Interstate Commerce Commission we took those into our fixed capital at the depreciated value. Let us assume that that was 80 cents on the dollar. We were here trying to determine what it would cost to reproduce all of this property new. The dollars represented by those instruments were then put into relation with the current present date cost new. The studies for deprecation will determine as of this date what the

depreciation is existing in those instruments, and that is the reason we show that 106.9.

It is a fair statement of what I am saying, to say that we bought this station equipment at 20% less than the cost new from the A. T. & T., so that it was second-hand material depreciated 20%. We put them in this appraisal at 100% because we were expressing them in terms of current cost new. Mr. Sloan could not now determine the difference between depreciation now and depreciation in 1927. In taking off 10% for depreciation Mr. Sloan is taking the condition of all of the instruments in service today.

It is correct that all of the going value which we have bought and paid for has either been capitalized, or it has been paid for out of operating expenses each year as it was acquired. That is correct when we are sticking to cost, but when we are making an estimate of reproduction [fol. 294] cost we are not sticking to cost. The overall is the actual cost as compared with the production cost and you should not pick out one item in one and one item in the other. The production cost which has been set up here would be what it would cost a construction firm to build this plant. It has nothing to do with attaching the business or training the personnel and doing all those things which make up the difference between a going plant and the bare bones of the property. Assuming that the Court (in 1925) allowed something over $1,000,000 for going value, that was in addition to the going values that were charged to expense each year.

Referring now to the case in 1925 before the District Court, a physical count of the units and an appraisal of those units was made in that case by Mr. Robinson for the Company, the cost of reproduction new being $37,300,000. In that case I corroborated his estimate by introducing a composite index trend of actual telephone construction costs that we had made up. I testified in that case that by applying our composite index number, we would arrive at approximately $37,500,000 to be compared with Mr. Robinson's figure of $37,300,000. As I recall what we did, we took the value found by the Commission at June 30, 1914, we took the gross additions for each group of accounts and the retirements for each one of these groups and accumulated them similar to the way we accumulated the station equipment group in this current study. What I did then

was to restate those books on the basis of the original value, plus all of the additions and less all of the retirements in terms of cost that were current in 1923. At that time the engineer's estimate of what it would cost to reproduce the property greatly exceeded the book costs, because the books had substantial amounts of property put in at pre-war prices at considerably lower levels, so we restated the books [fol. 295] to the level of the engineer's costs.

I believe I applied the index number to the 1914 valuation by the Commission and also to the costs. On a slightly difference basis, I have extended the composite index number down to 1932, which brought me to a figure for reproduction cost new in 1932 of something over $53,000,000, but that was only an approximation and no attempt was made there to put it on a wholesale reproduction basis. The reproduction cost study presented here shows a lower figure. Anyone who looks at the Company's composite index in the 1925 case and compares it with the All-Commodities index figures of the Department of Labor can see how favorable the comparison is. I am speaking now just of the general shape of the All-Commodity index and the telephone construction index. The telephone construction index never did reach the peak that the All-Commodities did and never had the drop that the All-Commodities did. I did testify before the District Court in the 1925 case as follows:

"That means that our experience here is not different from the general experience of sales commodity prices and some of those other trends, except that there is a perceptible lag in our indices as compared with the others. We were slower going up and a little slower coming down, and just as they have reached a level a year or two ago we are reaching a level in 1924."

The application of the telephone construction index applied in the way I applied it, would produce a higher figure than the application of the All-Commodities index in the way the Court applied it. The two methods of application were not similar at all. I analyzed the gross additions and retirements separately. When the Court in 1925 applied the all-commodities index it was applied to net additions. [fol. 296] Net additions are the result of subtracting retire-

ments which went into the picture at difference costs levels and the gross additions go in at the current cost levels.

As to the comparison of the telephone construction index and the wholesale commodities price index, and the effect thereon of the Western Electric relationship to this Company, I would like to state two things: The first thing is that there are a great many dollars which get into our property that are not the direct result of Western Electric prices for material. One of those is labor, and labor is a very substantial element in the constructing of plants. The second thing is that taking two different indices and applying them in two different methods over a period of year, you may come out with answers that are not very far apart at a particular date. That is a coincidence. It does not prove that either the index or the method is proper. That coincidence may not be there the next year, it may not have been there the year before.

As to whether the special telephone costs traveled along with the general commodities or not, I am going to introduce later some curves or charts to show the trend over the period from 1914 to 1932. Speaking of the period 1914 to 1923, the point is that telephone construction costs never did get anywhere near as high as the commodity index. The all commodity trend had taken a curve that had gone up to a great big peak and then came down. While the telephone construction curve went along on a slower curve it was never as high as the curve of the commodities trend, it did not go up to the top peak of that trend nor did it have the same amount of reduction.

As to whether I used the All-Commodities index in the 1923 case to corroborate the reproduction cost new appraisal, if we put the two curves one alongside the other I [fol. 297] do not see that that applies those curves to any telephone construction dollars.

Redirect examination:

As to the changes in Western Electric prices which affected new apparatus and equipment, the translators used by me for the central office equipment and station equipment accounts show the effect of such price changes. The 1932 reproduction cost- included in the appraisal are lower than the actual costs in 1932.

As to the instruments purchased from the American Company, whatever effect they might have in this appraisal would be limited to such instruments as have not been retired from service since the purchase.

As to the portion of the typical offices priced out in connection with central office equipment, I explained that we priced out the majority of the items in each one of the typical offices, for example, 80% in the case of the Vernon Central Office. We assumed that trend of costs of the principal items in the typical office measured the trend of cost for additions to all of the offices in the particular group. In all of the other accounts we priced out a considerable portion of the total amounts in each account when we priced out the principal items. In my opinion, assumptions which we have made in connection with this appraisal are entirely reasonable and sound. I believe that they will produce results which will very closely approximate the results obtained by a complete pricing of all the items. The slight difference that might exist could be either on the high side or the low side. Restating the test that I made in connection with the outside plant accounts: I made the original study based on the 1923 appraisal that was made by Mr. Robinson. I checked it with the 1923 appraisal that was made by Mr. Sloan. In the five items of outside plant ac- [fol. 298] counts, by using Mr. Sloan's figures, I got a result slightly in excess for three of the five items, and a little bit lower in two of the five items. Matching those slight differences opposite each other, to the extent that when we matched up the totals on a $20,000,000 base, the difference was $24,000, which is just slightly over one-tenth of 1%.

The final figure under Column C in Exhibit A-32, reproduction cost less depreciation of approximately $48,000,000 is the result of my calculation for a rate base, working on the theory of reproduction cost new less depreciation. It is one of the evidences of value which I understand must be taken into consideration.

As to whether, in all the figures and estimates which I have given, I have reached any other conclusion by any other method, which I can present to the Court, the only one other thing that I would suggest is the book cost of the property, shown on Exhibit A-2, line 18, which is approximately $50,000,000, plus $1,600,000 for working capital, which I think is comparable with the final figure of approxi-

mately $48,000,000 shown on Exhibit A-32. We should, however, also give some consideration to going value in connection with costs.

The figure of $55,000,000 on Exhibit A-32, which is reproduction cost new without depreciation, may be comparable to the figure of $50,000,000 on Exhibit A-2, provided we add to that last figure $1,600,000 for working capital. I think another comparison could also be made of the $49,000,000 shown in Column A of Exhibit A-32, and the $50,000,000 of actual cost, and then consideration given to the existing depreciation in the property and to going value and working capital.

[fol. 299] J. L. DAWSON SPEER, a witness of lawful age, was produced by and on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, plaintiff, and testified as follows:

Direct examination:

I am 34 years old and am Chief Engineer of The Chesapeake and Potomac Telephone Company of Baltimore City. I graduated from Union College in Schenectady, New York, in June, 1920, with the degree of Bachelor of Science in Electrical Engineering. In July, 1920, I went with the General Engineering Department of the Chesapeake and Potomac Group of four Telephone Companies as Engineering Assistant. In 1923 I was a member of the Engineering Sub-Committee of the Commission on Efficiency and Economy for the City of Baltimore. In 1923 and 1924 I worked on inventories and appraisals of the telephone properties in Maryland, Virginia and the District of Columbia. In 1927 I was appointed Foreign Wire Relations Engineer of the Chesapeake and Potomac Group of Companies. This work involved negotiations with other wire using utilities such as railroads, telegraph and power companies, and the making of studies for the coordination of plant and allocation of costs to the various companies. On April 1, 1929, a separate Engineering Department was established for The Chesapeake and Potomac Telephone Company of Baltimore [fol. 300] City operating in the State of Maryland, and I became Transmission and Protection Engineer. On April

1, 1930, I was appointed Chief Engineer, which position I now hold.

As Chief Engineer I am responsible for the planning and coordination of the plant, for the establishment of standards of construction and maintenance, and for the planning necessary in connection with plant extensions, betterments and replacements. Specific projects are studied and engineered and an estimate made of the cost of each project before proceeding with the work. Such estimates are either prepared under my direct supervision and direction or are submitted to me for review and approval. A constant check is maintained of the construction unit costs which we use in estimating the costs of constructing plant, and when a project is completed, a report of the actual cost of the work (known as a "completion report") is prepared and a comparison made with the prior estimate.

I furnished to Mr. Gretz certain information in connection with the appraisal of the property as of December 31, 1932, for the station equipment and outside plant accounts, that is, accounts covering poles, wires, conduit and cable, and developed reproduction unit cost as of December 31, 1932. The general factors entering into these unit costs are material and labor. For material, since the Company purchases most of its material and supplies from the Western [fol. 301] Electric Company, I used the Western Electric published prices as of December 31, 1932, plus allowances, developed from the Company's experience, for freight, supply expense, and for minor or exempt materials.

Referring to page 5 of Exhibit A-31, the exempt materials on line 2 actually cost the Company in the years 1930, 1931 and 1932, an amount equivalent to 5.6% of the total materials disbursed. In this appraisal I rounded that off to 5.5% which I added to the material prices, for the item of exempt material. Referring to the item of supply expense, that is the expense of storerooms and of handling materials (line 5, page 5, Exhibit A-31), the Company actually spent in these three years, $189,535 for supply expense. This is 3.86% of the cost of material disbursed. In our appraisal I used 3%, because on a reproduction of the property we would not be handling recovered material as in our day to day work, when station apparatus is passing in and out of the storeroom.

As to the labor element of the unit costs, I analyzed the Company's experience on large projects to determine the man hours that were required for the various operations, such as digging a hole for a pole or erecting a pole or splicing a cable, and I adjusted this actual experience downward where necessary, to reflect the higher efficiency of wholesale or large construction work. I also analyzed the current average labor rates for the various classes of labor, and [fol. 302] developed reproduction labor rates to reflect the effect of putting our existing forces back on a full time basis and furnishing or augmenting these forces with the normal number of temporary and semi-skilled employees at lower rates, which made the labor rates used in the appraisal lower than the Company's actual current rates as of December 31, 1932.

These labor rates were combined with the man hours, and there was added the items of supervision and miscellaneous expense as developed from the Company's experience, but modified to a wholesale reproduction basis, and this gave the labor element of my unit cost. Referring to Exhibit A-31, page 5, lines 9 and 10, expenditures for Plant Supervision and for Tool Expense, which is the expense of small tools, amounted to approximately 7.8% and 4.9% respectively, or a total of 12.7% of the labor used in the appraisal. In the reproduction appraisal, I used 12%. This would be divided; about 8% for Plant Supervision, because with the efficiency I have estimated in the labor unit costs, the supervision would be a little bit higher than it would be in our day to day work; and 4% for Tool Expense, because in my opinion there would be more efficient expenditure of tools in a large program than in our day to day operations.

Miscellaneous Expense includes the cost of motor vehicles, board and lodging where necessary, travelling expenses, and any miscellaneous bills that might come up in the course of a job. I analyzed the actual costs incurred for Miscellaneous Expense, in the several acccounts for the years 1930, 1931 and 1932, and this analysis indicated that [fol. 303] on a wholesale reproduction program we could get appreciably more efficient use out of our motor vehicles and out of our other work equipment than we do in our day to day work, where instead of work being in a straight line operation, it is scattered and the crews keep moving around. Also a majority of the miscellaneous bills that

crop up on these small jobs, in the day to day work, would not be necessary. For these reasons I reduced the motor vehicle expense and practically eliminated all of the miscellaneous bills. The expense shown on line 11 (page 5, Exhibit A-31) is a comparison, from the standpoint of its relation to labor, of the amount of miscellaneous expense that we actually incurred in the three year period, compared to a comparable amount in relation to labor as included in the appraisal. That is shown merely for comparative purposes, as the item of Miscellaneous Expense was developed separately for each account. By these methods I obtained my unit costs for material and for labor and for miscellaneous expenses.

In the case of outside plant accounts, Mr. Gretz selected the principal or controlling items for each account in the group, and by the application to each of these items of the reproduction unit costs, developed as I have described, principal or controlling items were priced out in place as of December 31, 1932. In the case of the station equipment, Mr. Gretz selected his principal items from each year's [fol. 304] additions and from the 1923 property, and I priced out the quantities for each year from 1923 to 1932. The results of such pricing gave the reproduction cost new of the principal items in the Company's outside plant and station equipment accounts as of December 31, 1932.

As to the Central Office Telephone Equipment, I furnished Mr. Gretz index numbers, which he used in developing the reproduction cost as of December 31, 1932. There are 134 central offices of all types in Maryland, which automatically fall into five well-defined general classes. First, the large manual common battery central offices, of which we have 20. Second, the small common battery offices, of which we have 23. Third, the toll terminal equipment, which is equipment directly associated with the toll lines and not with the switchboard, of which we have 6 installations. Fourth, the local battery or the magneto offices, which are the small offices, and of which there are 87. And fifth, the dial central offices, of which we have 4. For each class except dial, I selected an office in the State of Maryland which, in my judgment, was typical of its particular class. This classification was followed because the cost trends of the several types of equipment installed are not the same.

Using the first class, the large manual common battery central offices as an illustration, and explaining my procedure: I listed the principal and controlling items of material, representing generally about 80% of the value of the materials in the typical office. Starting with December 31, [fol. 305] 1923, these items of equipment were priced out as of December 31st of each year, up to and including 1932, in order to establish a composite trend for material. Western Electric published prices taken from price lists that we had for each year were used for pricing that apparatus at the spot prices current each year. As this type of equipment is generally furnished and installed by the Western Electric Company, we analyzed our bills of that Company for the various years to establish the relation of Equipment Specifications and Installation Cost to the cost of material, expressed as a percentage. These percentages were checked with the Western Electric Company, in order to see if the percentages from our Company's experience were in line with the Western Electric Company's general experience, and whether they were reasonable. The cost of the Equipment Specifications and Installation Costs were added to the material costs in accordance with these percentages, and the total cost in place as of December 31st, each year determined. From these annual total costs, index numbers were developed for each year with December 31, 1932, as 100. In the case of magneto offices which are installed by our own forces, the Telephone Company's own labor costs were used and the item of Equipment Specifications was eliminated, because that is taken care of in our general engineering costs.

As to dial central office equipment, we have only four such central offices in Maryland, and our experience of cost [fol. 306] trends of this type of equipment is somewhat limited. However, since all panel dial equipment is of the same general type, consisting of selectors and line finders, etc., and there are proportionately in one dial office about the same number of selectors and line finders, etc., as are in any other dial office, the A. T. & T. maintains currently for the information and assistance of the operating Bell Companies, a set of index numbers for this type of equipment. These index numbers are based on a typical dial central office, using the same general methods as we used

for our manual offices, as I have previously described. That typical office happens to be Germantown, Pennsylvania. I analyzed this Germantown office; it is generally the same thing as our Maryland dial offices, and having satisfied myself that it was typical of our dial offices, I advised the use of the A. T. & T.'s dial index for the dial central office equipment. In this connection, I made several checks on that office. I studied the specification on the Germantown office to make sure it was pretty much the same. I also took our actual bills for dial offices from the Western Electric Company, split them up into the component parts of material, Equipment Specifications, and Installation Costs, and by the use of the component parts of the A. T. & T. index, trended our actual costs for the components of our dial offices separately, and by this means compiled a composite index, using the weightings according to our Company's actual experience. The application of this composite index gave an answer about five or six tenths of 1% higher than I got by applying the A. T. & T. composite index.

[fol. 307] I furnished those five different series of index numbers to Mr. Gretz. Each of these separate series of index numbers is based on the cost in place each year of a complete or at least 80% of a complete office. Our method assumes that the aggregate annual additions to all of the offices in a particular group, will trend about the same way as the cost in place of a complete office. I think that is reasonable, because the 1923 property consisted of complete offices, and a large portion of the additions consisted of complete new offices that were constructed at one time, and the part that did not go in as complete offices consisted of switchboard additions to some offices, line additions to other offices, and power plant additions to some other offices, and in the overall would represent a cross-section of a complete office.

I think that the offices I selected for pricing out were typical of the group each represented. In the group of small manual type common battery offices I made a check of this. The typical office selected for this group was the central office at Frederick. I selected an office that was twice the size of the Frederick office, namely, the Salisbury office, and developed an index for Salisbury the same way as I had done for Frederick. I also developed index num-

bers for the Cambridge office, which is about one-half the size of Frederick, and for the Belair office, which is about one-third the size of Frederick. The weighted composite index numbers from the four offices gave me a result about 1% higher than actually used in the appraisal and obtained from the use of the index numbers developed solely from the Frederick office.

[fol. 308] Each of these five classifications comprise a fairly well defined group. The main difference in the characteristics between the large manual offices and the small manual offices is one of size. They are all composed of switchboard sections and jacks and cords and relays, the equipment for manually completing calls. The toll terminal equipment consists of vacuum tube amplifiers, known as repeaters, and each of those carries with it its proportionate amount of networks and filters and ringers, so that whether you have an installation of one of those or twenty of them, they will each carry their same proportionate share of miscellaneous equipment. The dial equipment is generally similar to that in almost any dial office, as far as its make-up is concerned. The magneto equipment consists of one or more sections of self-contained switchboards and a few dry batteries and they are all generally similar.

In developing the several series of index numbers for the Central Office Equipment Account, the material prices used were taken from the Western Electric price list as of December 31st of each year from 1923 to 1932. The items of Installation Cost and Equipment Specifications, in the cases of the equipment installed by the Western Electric Company, were based on our Company's actual experience checked with the Western Electric Company, to see that our experience had been typical, and for our own installations, the labor costs were based on actual experience. I did not use the actual current installation costs and costs of equipment specifications as of 1932. Explaining what I used: In the years 1931 and 1932 the Western Electric Com-
[fol. 309] pany was confronted with the same problem that we were. They had to put their people on short time, and get rid of a number of temporary employees and semi-skilled employees. They even regraded section district foremen down to job foremen, and in some cases back to installation work on the frames. So their actual 1931 and 1932 costs of installation reflected higher labor rates and

also a larger proportion of unproductive time than we might expect to have on a reproduction of the property. I took into consideration the fact that the Western Electric installation forces are more or less localized and operate on a district basis, and that during the year 1929-30 in this district the Western Electric was doing for the four Chesapeake and Potomac Companies about the same volume of work that they would have had to do in a reproduction of this property in any one year. For this reason in the preparation of the index numbers for 1931 and 1932, I used the actual costs of Equipment Specifications and Installation which were billed in the year 1930. That explains why the translators for 1931 and 1932 are lower than 100. The cost of installation and Equipment Specifications were held constant at 1930 levels, and do not reflect any increased cost resulting from part time or other conditions which would not prevail in a reproduction program. Materials were taken at the actual price current as of the date of the appraisal.

[fol. 310] While the index numbers for each of the groups of Central Offices were reproduction cost indexes, Mr. Gretz applied them to book costs, and he did not, therefore, make any reduction for the piecemeal work that we have in our day to day work. In a growing business it is necessary to make additions to plant from time to time, and in the case of the central office equipment these additions may be in the form of an entirely new central office, in which case the conditions under which the work is carried out would be equivalent to wholesale, or the additions may simply involve the provision of additional lines or additional operators' positions. In those cases it is necessary to prepare separate drawing and separate equipment specifications for the additions and the miscellaneous cost of travelling, such as installers going to the job and off again, are higher in proportion to the total cost of the job. Such conditions had to be taken into consideration and this could have been done in one of two ways: it could have been done in the way Mr. Gretz did it in the station account, by deriving his indexes from the relationship between actual cost and reproduction cost, or it could have been done by developing each year's index and then make a lump sum deduction for piecemeal. The latter was the simpler method to apply in the case of Central Office Equipment,

and I developed the amount to be deducted for the element of piecemeal construction. I made studies of the difference between the 1932 cost of reproducing the same typical central offices as a whole on a wholesale reproduction basis, [fol. 311] and the actual cost of the same offices translated into 1932 cost levels. The difference between the actual costs of those offices trended forward and the estimate of what it would cost to reproduce them determined the amount of excess cost due to piecemeal construction. I related this excess cost to the trended book cost of the additions and determined the correction to be made was 17% of the cost of the piecemeal additions, and I furnished that 17% adjustment to Mr. Gretz.

Some of these additions, the cost of which I trended, had elements of contingencies in them. For instance, I know that on certain of the jobs men were forced to work overtime in order to meet schedule dates and things of that sort, and insofar as these jobs did include some contingencies, the deduction of 17% would deduct any contingencies that happened to be in the books of the additions to the Central Office Equipment Account.

For the Multiple Private Branch Exchange Equipment, since this equipment is generally similar to Central Office Equipment, I followed the same method as with Central Office Equipment.

As to the item of overheads or undistributed construction costs shown on Exhibit A-31, I furnished Mr. Gretz with the percentages to be used for contingencies, engineering, administration and legal costs. Undistributed construction costs apply generally to a property as a whole and are not related to any individual unit. Such costs, while they form a part of the actual cost of constructing the property, can- [fol. 312] not be identified with a particular pole or particular piece of cable. Some construction costs can be assigned to a particular unit of property and some can be assigned to a particular group of units of property, while other costs, such as these Undistributed Construction Costs, are only assignable to the property as a whole. In the development of labor unit costs, the time of the men working on a specific job, for example actually digging the holes for the poles and setting the poles up, can be charged directly to the cost of those poles, and such direct cost of labor is included in the unit costs. There is also the cost of

the direct supervision of that labor, and this can be related to the labor in connection with that particular class of work. On the other hand, in the case of an engineer, he will be working on a whole lot of different kinds of units at the same time. For example, in making a layout of the outside plant in a particular small town, he will include poles and wire and cable and all the other plant, so that instead of charging his time specifically to a pole or an amount of wire, his time is charged to the construction as a whole as an overhead. We therefore characterize those cost items, which are assignable to specific items of property, as directly distributed costs, and the other cost items, which are not in practice assigned or assignable to specific items of property, as Undistributed Construction Costs. Such Undistributed Construction Costs are just as much a part of the cost of constructing the property as the labor that digs the hole and the pole that goes in it.

[fol. 313] Taking up the item of Contingencies, I have included in this appraisal an amount of 2% of the directly distributed costs to cover Contingencies. An allowance for this item should be made, since in determining the reproduction cost, there have been used unit costs which will be applicable to work performed on a wholesale basis, where no unforeseen difficulties are to be encountered and the projects are carried on in the most economical manner in accordance with a carefully planned predetermined schedule. From our experience we know that unforeseen conditions will occur, such as disasters, unforeseen construction difficulties, delays, mistakes, changes in plan, and these conditions cannot be foreseen even with the most careful planning beforehand. For example, in the Buildings Account, the building appraisers assumed cleared sites and allowed nothing for the cost of demolition. They also assumed all sites to be at present grade, since they could not estimate what the grading costs would be without knowing the original grades of the property. We know, however, that certain of the sites were not at the present grade and had to be graded.

In the Central Office Equipment Account the reduction which was made for piecemeal was designed to eliminate any contingencies or overtime we might have encountered in our day-to-day work. In the other accounts, no allowance for contingencies has been made in the reproduction unit costs, though we know that in our work we encounter cave-ins of foundations, damage caused by rain storms,

fire, and by severe sleet storms before the plant is placed [fol. 314] in service. From my experience and knowledge of the plant, it is my opinion that an allowance of 2% is a reasonably conservative allowance to be made for this item of contingencies. I did not include anything for omissions, since we were using the inventory of the property as shown by our books.

As to the item of Engineering, in order to reproduce this property, we would have to have a force of engineers organized generally along the same lines as our present organization, and that force would be required both prior to the actual construction and during the progress of the work in order to design, plan, and coordinate the various individual projects. One big difference between the reproduction program and our day-to-day work is that in the latter we deal with some big projects and some small projects, whereas in the reproduction we would be dealing with all large projects, and the engineering would be relatively less. The Company's experience for the years 1930, 1931 and 1932, shows that the actual charges to the Land and Buildings Account in those three years had been 4.49%. After analyzing those charges, I concluded that about 2% would be the proper allowance for engineering on land and buildings in the reproduction of the property.

In the Central Office Equipment and the Multiple Private Branch Exchange Accounts, our experience showed 10.7%, and I estimated 7% would be a proper allowance in a reproduction of the property. In the outside plant accounts, our [fol. 315] experience had been 12.3% for engineering, and I estimated about 9% would be the proper allowance on a wholesale reproduction of the property. The weighted percentage of these three percentages of 2% on the land and buildings, 7% on central office equipment, and 9% on outside plant, was an over-all percentage of slightly over 6% of the total directly distributed costs, and I advised Mr. Gretz to use 6% of the total directly distributed costs as the amount to be included for Engineering in this reproduction cost appraisal.

The item of Administration and Legal Costs represents the expense of the executive, legal, financial and auditing forces, which are necessary in the supervision of an extensive construction undertaking. I made a study of the Company's experience for the purpose of ascertaining what the actual administration and legal costs were in relation to

the expenditures supervised by such administration and legal forces. The Company's expenditures so supervised during 1930, 1931 and 1932 were approximately the same as the total expenditures in a reproduction which would have to require such supervision, and the study developed that the ratio of administration and legal costs to expenditures supervised during those years amounted to slightly over 3%. I advised Mr. Gretz to use 3% to apply to all of the construction costs supervised in this appraisal.

Turning now to Exhibit A-32, which is the study of reproduction cost as of December 31, 1933, I used the same [fol. 316] general methods as I used for the 1932 appraisal, carrying the results down another year, and giving consideration to retirements and additions in the several classes of property, and developed the necessary reproduction unit costs as of December 31, 1933.

In the Outside Plant Accounts, I used the actual units in service as of December, 1933, so we did not have to make any reduction or specific adjustment for retirements. Mr. Gretz furnished me with a new list of principal items in each account, and I priced them out. There has been a reduction in freight rates, due to the elimination of the freight rate surcharge. There was also some change in the prices of different materials, the principal fluctuations in prices being in creosoted poles which came down, creosoted wood duct, which went up, and copper wire, which went up. For 1932 I had used wholesale reproduction labor costs, based on the Company's experience, and since that experience had undergone no change, I used the same labor unit cost for Company labor in the 1933 appraisal. In the case of the underground conduit, however, this is principally in Baltimore and vicinity, or in the vicinity of Washington, and is materially affected by the cost of common labor. The rate for common labor December 31, 1932, was about thirty cents an hour, and on December 31, 1933, that rate was forty cents an hour. And I gave effect to that one increase in wages in determining my reproduction cost as of December 31, 1933. The data developed by me for the 1933 appraisal gives effect to the 1933 quantities of units and to [fol. 317] the prices of material, freight costs, etc., as of December 31, 1933, and to the labor costs which in my judgment would be applicable on a wholesale reproduction basis.

In the Station Equipment Account, there has been practically no change in material or installation costs. It was

necessary only to take out the retired property in the same way that we had taken out the retirements for other years, and I developed the reproduction cost of the principal and controlling items in the 1933 additions in the same manner as I had done in connection with the 1932 appraisal.

The Central Office Equipment Account for 1933 I handled a little bit differently. In order to keep our own forces busy during 1933, we installed practically all of our central office equipment with our own forces instead of with the Western Electric Company forces, so that the Western Electric index would not apply to the 1933 additions. I eliminated the property retired during the year by deducting the amount at which such property was included in the 1932 appraisal. No change had occurred in material prices during the year, and I had used reproduction labor costs in the 1932 appraisal, so the balance in this account of the property still in service was carried forward into the 1933 appraisal. The property added during 1933 was appraised by direct estimate at 1933 reproduction costs as part of a large job, and was added to the balance in the account brought forward. We did not reapply any new price to that part of the central [fol. 318] office equipment which was appraised in 1932, because there had been substantially no change in the Central Office Equipment Account as to material cost and as to installation labor on a reproduction basis. The actual cost of labor had gone up a little due to short-timing, but estimating on a reproduction basis eliminates the short-timing and the labor costs are the same for both years. As a matter of fact, Exhibit A-32, Sheet 3, shows that gross additions in this account of $27,000 in 1933 have been included in the appraisal at $19,000. Taking out the retirements at the same amount at which such property was included in the 1932 appraisal, brings about a net result in this account of a reduction of $33,430 from the 1932 to the 1933 appraisal.

The same method was followed for the Multiple Private Branch Exchange Account, and resulted in a net reduction in that account from 1932 to 1933 of approximately $15,000. For the Overheads or Undistributed Construction Costs in the 1933 appraisal, I advised Mr. Gretz to use the same percentages as for 1932, because I had developed these percentages on the basis of a wholesale reproduction.

As to what would be the effect on the entire appraisal of the reproduction cost new as shown in these exhibits, A-31 and A-32, if the entire increase in prices put into effect by

the Western Electric Company in 1930 was ignored: The increase in Western Electric apparatus and equipment effective November 1, 1930, and subsequent increases up to December 31, 1932, would have made a difference inclusive [fol. 319] of Undistributed Construction Costs, of approximately $1,500,000 in the total appraisal, that is, the reproduction cost new as of December 31, 1932, and as of December 31, 1933, would have been reduced by that amount of $1,500,000, and the amount of the reproduction cost less depreciation would have been reduced approximately $1,300,000 for both years.

The price increases in question did not affect certain materials manufactured by the Western Electric Company such as lead-covered cable, and if all of the prices in effect in 1930 for materials manufactured by the Western Electric Company had been used for the appraisal the reduction from the amount of the reproduction cost new, as shown in the exhibits, would have been about $1,100,000 for both years, and the effect on the reproduction cost new less depreciation would have been a reduction of approximately $950,000.

If the increase in prices for materials manufactured by the Western Electric Company, which became effective January 1, 1934, had been taken into consideration and the property appraised as of January 1, 1934, the reproduction cost new, including undistributed construction costs, as shown in Exhibit A-32, would have been increased $1,400,000, and the reproduction cost new less depreciation would have been increased about $1,250,000.

[fol. 320] Cross-examination:

In my 1932 appraisal I used for common labor the current labor rate in effect December 31, 1932. This affects particularly the Conduit Account. As to the pole line costs, a small portion of the labor work is done by some ex-telephone linesmen, who have set up as independent contractors. I took into consideration the maximum amount of work these contractors could possibly do in the reproduction and in determining my unit costs of placing poles, I weighted in the costs we pay such contractors with what the costs of such construction with our own people would be. For the labor required for splicing cables, installing equipment and handling the telephone plant I used the Telephone Company's labor rates adjusted downward to reflect what

in my opinion would prevail in wholesale or large construction work.

As to the letter dated September 4, 1931, which I wrote to Mr. Irish, General Manager, and which I identified before the Commission, this equipment referred to therein is in the Bradley-Wisconsin Central Office and consists of No. 11 Wired Units, which Mr. Cox testified had increased in price about 20%. So far as the labor costs of the Western Electric Company went up in 1931 and 1932, I took that into account in the development of my index numbers and held the labor costs constant as of 1930.

[fol. 321] (Thereupon there was offered in evidence by the defendant an exhibit marked "Defendant's Exhibit D-1.")

DEFENDANT'S EXHIBIT "D-1."

Chevy Chase, Md.—Bradley-Wisconsin Central Offices—Section and Line Addition—Specification No. ME-1047—Estimate No. 219.

"Baltimore, Md., September 4, 1931.

"Mr. F. J. Irish, General Manager:

"This is to request that supplemental authority be given for expenditures under Estimate No. 219 greater than the amount appropriated.

"Estimate No. 219, which was approved in November, 1930, provided for the installation of additional section and line equipment at the Chevy Chase, Md., Bradley-Wisconsin Central Office. This estimate carries a gross appropriation of $13,975, but the cost of this project is now expected to be approximately $21,500. An analysis of the difference is given below:

	Estimated	Present view	Difference
Central Office Equipment	$9,200	$11,900	$2,700
Western Electric Company's Engineering	800	1,250	450
Total Material and Engineering	$10,000	$13,150	$3,150
Western Electric Company's Installation	2,500	4,800	2,300
[fol. 322] Total	$12,500	$17,950	$5,450
Other Equipment of Central Office	135	150	15
Acceptance Testing	.....	350	350
Total	$12,635	$18,450	$5,815
Telephone Engineering, etc.	1,315	3,000	1,685
Removing	25	50	25
Grand Total	$13,975	$21,500	$7,525

"As indicated in the above tabulation, the actual expenditure will exceed the total gross expenditure authorized by the estimate of $7,525 or 33.8 per cent.

"Since this estimate was prepared, the Western Electric Company's material prices have increased approximately 20 per cent., also the allowance in the estimate for cabling was underestimated. This increase in prices and underestimating will necessitate an additional expenditure of approximately $2,700 for material.

"Western Electric Engineering is somewhat high for the amount of work involved, but is consistent with the charges which we have recently been receiving for this type of work. [fol. 323] "This estimate was based on normal installation cost, however, since the time the estimate was prepared, the number of men in the Western Electric Company's Installation Department has been materially reduced resulting in the force now being composed of higher priced men. As a result, the cost of installing this project is now approximately 25 per cent. greater than it would have been at the time the estimate was prepared. Furthermore, the allowance in the estimate for extending the subscriber line multiple into the new section was not sufficient for the work involved. In addition, it was necessary to install 200 subscriber lines in advance of the regular installation to care for the inauguration of extended area service in this district. These conditions are responsible for our estimated labor figure being low by approximately $2,300.

"At the time Estimate No. 219 was approved, it was the practice to charge the cost of the Plant Department's acceptance testing in connection with the installation of new equipment to the Maintenance Account. The Accounting Department has since ruled that the cost of this work should be charged to the construction account.

"The difference of $1,685 in the telephone engineering and loading is due to the fact that this item is taken as a [fol. 324] percentage of the Western Electric material and labor costs and is also influenced by the fact that the telephone loading rate was raised after the estimate was submitted.

"As this overexpenditure is not due to any radical changes in the original plan of the estimate, but entirely to an insufficient allowance for material and labor, your ap-

proval is requested to exceed the original appropriation of the estimate by the amount of $7,525.

(Signed) J. L. Dawson Speer, Jr., Chief Engineer.

Approved:

(Signed) F. J. Irish, General Manager. J. W. T."

The original estimate, #219, approved by the Board of Directors in November, 1930, was prepared prior to that time and did not reflect the November 1, 1930, price increase, which was explained by Mr. Cox. In addition we had omitted certain things from the original estimate.

[fol. 325] Redirect examination:

The only element included in the letter just read which would affect my appraisal, is the element of material.

[fol. 326] HARRY BARKER, a witness of lawful age, was produced by and on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, plaintiff, and testified as follows:

Direct examination:

I graduated as an Electrical Engineer from the College of Engineering of the University of Vermont in 1904. Before then, I had worked as an electrician and mechanician and I had spent three summers in the shops of the Crocker-Wheeler Electric Mfg. Co., Newark, N. J. For some three years, I was engaged in teaching and miscellaneous electrical, hydraulic and mining work in Vermont, Arizona, California and Nevada. For ten years (1907-1917), I was an associate editor and electrical mechanical engineer on the "Engineering News" and "Engineering News-Record". I came on this technical journal about the time the present kind of public utility regulation was initiated and I specialized on these matters as well as reports on the design and construction of various utility properties.

For about two years I was a Captain of Engineers, U. S. Army, most of the time as an officer in charge of camp utilities such as telephone system, water, power, sewerage, roads, buildings, fire protection, etc. I was on leave from the Army in 1919 as an alternate on the Vaulation Board

for the Pittsburgh Railways System. (This Board was a joint one representing City, Company and State Public [fol. 327] Service Commission). This was about a $60,000,000 property. Later I was a member of a valuation committee for the Philadelphia Rapid Transit Company. This was about a $200,000,000 property. Late in 1919 I started the firm of Barker & Wheeler, Engineers, which has carried through to the present date. My work mostly has been in our public utility efforts and in coordinating the activities of the three divisions in which we are organized—Public Utility, Municipal and Industrial. Under my direction, we have valued electric light and power systems, electric railways, bus lines, communication systems, artificial gas plants, water works, etc., in about sixteen states covering upward of $300,000,000 cost. Since 1925, I have been consulting engineer to the Vermont Public Service Commission; other commissions served have been the Virginia Corporation Commission and the West Virginia Public Service Commission. I am a member of the American Institute of Electrical Engineers, and of the American Society of Mechanical Engineers. I hold licenses to practice engineering in the States of New York and New Jersey.

Familiarity with construction of telephone properties was obtained as follows: Prior to 1904 I worked on the installation and repair of small private installations. At another time I had charge of a private 100 mile telephone-telegraph line. In college I took courses in signalling, telegraphy and telephony. While with the "Engineering [fol. 328] News" I had to keep in touch with the more significant plant developments, underground, extension of inductive loading, repeaters, long distance transmission, machine switching, etc. In the Army, I acted as Signal Officer, in charge of cantonment telephone plant and service, at a port of embarkation. In the Pittsburgh and Philadelphia traction systems, with the appraisals of which I had to do, there were extensive private telephone systems. For a few years I was consultant to an independent system in New York State known as Orange County Telephone Company, a $1,000,000 property. I was retained by the Vermont Public Service Commission in regard to the valuation, plant, accounts and operations of the New England Telephone and Telegraph Company in Vermont, by the

Public Service Commission of West Virginia and by the Virginia Corporation Commission in State-wide telephone rate cases. Nearly all of the electric power utilities, which I have appraised, and whose investment accounts I have restored, have had special telephone facilities.

For some 15 years I have been making practical use of two kinds of index numbers which I call "General" and "Special". In the first class are indexes of business activities which are not price indexes but indicators of the volume of business being done from time to time. Another type in this class is the various specific commodity price indexes or the weighted multi-commodity price index. I have used these broader indexes in studying past business movements and trying to peer ahead to judge what to ex- [fol. 329] pect in business developments, or in other words, as business barometers. I used those in our day to day or time to time attempts to get some idea of what we might expect under business conditions for ourselves or for our clients who might want to expand or retrench.

The specially developed index numbers or indexes or multipliers, cost translators, or ratios, have been used for translating the costs of equipment or construction as of one date to some other date. Those cost translators have been used for quick revisions of deferred construction estimates where a new date was fixed and an estimate quickly and economically obtained without the necessity of compiling an entirely new estimate. The same types of cost translators have been used in our firm for estimating approximate original costs in restoring book figures which had become obscure through inadequate or erroneous accounting entries. Cost translators have been used by us as a quick and economical method of revising the reproduction cost appraisal, to bring it up to a new date with approximate accuracy but avoiding the delay and expense of a complete reinventory and repricing. We have used these cost translators for revising reproduction cost estimates in about some twenty-five cases, amounting in the aggregate to some $50,000,000.

I was engaged by the Telephone Company to examine the methods followed in the estimate of reproduction cost new which has been presented in this case. I reviewed the methods and I made a series of checks to see if the method had [fol. 330] been properly applied. I reviewed the ways of

developing the unit costs that were employed and I also reviewed the development of the percentage costs where percentage costs were used, such as supply expense and the so-called exempt materials expense. In typical instances I checked the actual computations for which those methods were used, and, in order to test the use of the method, I had to carry representative transactions through from start to finish in the working papers and in the computations.

As to what my aim would be if I was desirous of obtaining a method of developing reproduction costs as a substitute for and without the delay and expense of following the ordinary methods: The fundamental aim is to approximate within the allowable limits of tolerance in accuracy, the same result that would be obtained from a detailed inventory and detailed pricing, or in other words, the result should approximate that obtained by following the accepted methods that are ordinarily employed in making a reproduction cost estimate of utility property.

In the ordinary recognized process of estimating reproduction cost by an inventory and pricing, there are several distinct steps that have to be taken. It is necessary first to secure an inventory of the property items; and that is, or should be, as far as possible, a schedule of units such as one would naturally count and record as they are in the possession and use of the utility. This schedule of units must be such that you can conveniently apply unit [fol. 331] prices to it. Such an inventory may result from an actual count, or it may result from the compilation of a checked book record of plant and property units, or it might come from both, whichever is the most economical, the most accurate or the most satisfactory from either point. Most of the appraisal engineers that I have dealt with think that it is more important to do a job of this sort quickly, with minimum expense, than to follow any single method of compiling the inventory or even of applying the unit prices, providing that we secure satisfactory accuracy. We aim to produce an accurate schedule of property, to which we can attach representative unit prices, but the approach to the different parts of the property may properly differ in the interest of speed and economy.

A second step in the production of an inventory and appraisal, is the development of the unit cost, which should

include the cost of all material ready for the job, and the labor of installing that material. Either in the unit costs themselves or by percentages to be applied to groups of priced out units, there needs to be introduced some cost items like the expense of the supply department, the tool and motor vehicle expense and sundries, such as travel or board and room of men necessarily sent on outlying work.

Another step is that of applying to the property those unit prices. This is the arithmetical work of attaching the unit prices by multiplication, and of making the extensions, [fol. 332] and carrying through the additions, by which you accurately total the figures, such as we have here in the exhibits.

Another step is that you have to determine upon a reasonable and economical construction program which is to be followed in the hypothetical rebuilding or reproduction of the facilities of a going utility, and to find out what would be spent for Undistributed Construction Costs. Undistributed Construction Costs, which are tied up closely with the construction or reproduction program of the utility property, are costs which are best determined, in my opinion, as a whole, and are applicable to the entire property, rather than being costs that can logically be distributed to each unit of property and equipment. If it is necessary to redistribute these costs subsequently, that is another matter, but in the first instance they are best determined by regarding the construction program and the expenditure as a whole. Some of these Undistributed Construction Costs are engineering, administration and legal expense during construction, the interest and taxes and insurance that would be required during the construction program, and the contingencies that would be met. These items are frequently spoken of as indirect structural costs; because they are costs which are inevitable in the construction of the plant and property, regarded as structures. They are costs that cannot be escaped in the building of utility property, and they are just as much a part of the definite physical property as are the materials and labor which can be charged directly to the several items of property, and which can be made up into unit costs, to be defi- [fol. 333] nitely ascertained, and associated with definite units of property. Such indirect structural costs are in-

curred in every day construction of any utility property, and are not merely some hypothetical part of a reproduction program. The only difference then between such costs in the every day construction of a utility property and in any construction according to a wholesale program, lies mainly in the relative size of some of the different undistributed costs. The cost of engineering is higher for a telephone utility in the ordinary every day construction of a growing concern than in a reproduction program. Telephone property is one of those which requires a maximum amount of engineering, in order to provide adequate facilities at economical costs, without having too large jumps in plant not immediately active. Some very sizeable jumps in plant are necessary in order to have facilities ready, but it is advisable to keep those to the minimum and still have service available on call, and for this there is required intensive engineering, as compared with some other utilities. Whenever a major plant extension is made, the extension and its attachment to the old plant in service require much engineering; reengineering is required every time piecemeal extensions of size have to be made; while in following a reproduction program, those several steps of piecemeal engineering can be consolidated, with resultant economy.

Interest during piecemeal construction is lower than in following a reproduction program, for one reason amongst others, because of the Company's method of accounting. It [fol. 334] is considered feasible, as resulting in a minimum amount of office work, to limit the interest being charged to items of property that are not completed within sixty days. If all the minor extensions that could be completed within sixty days had to have interest applied to them, probably the cost of computing the interest would be more than the gain of getting that into the proper capital account. Except for the larger projects, like buildings and central office equipment, most of the plant and property extensions of a telephone utility are completed in sixty days. By most of them, I mean the most in number. On the other hand, in a reproduction, following even the shortest reasonable construction program, nearly all the property is subject to interest charges of some size at some time in that program. If it is desired to take advantage of the large scale construction on a reproduction program, with its labor-economies and its lower engineering costs, we who

are engaged in appraisal work, regard it as only fair to admit and recognize the necessity of interest on construction work not yet ready for service.

In piecemeal construction, which is going on more or less all the time, the overheads are reflected in the actual costs on the books of the Company, except that the item of Interest During Construction is at a very much lower figure on account of the arbitrary rule that the Company does not figure interest during construction on items of less than sixty days each. Eliminating the item of Interest During [fol. 335] Construction, data as to the other undistributed construction costs are available in making a reproduction cost study, and is of the greatest possible use in making a reproduction cost study. The cost of engineering, for instance, is in the Company's books, but it is not all in one account. By an analysis of the construction work which has been accounted for, the cost of engineering can be separated. A review of the conditions under which the work was done, with a parallel statement of the engineering costs involved, assists one's judgment as to what the engineering cost would be if the actual conditions were modified to a large construction program. For engineering, there is usually a downward adjustment of actual experience, as the reproduction program contemplates a more economical and larger scale method of carrying on the work.

In preparing a reproduction cost study, if we are analyzing the common experience as an aid to judgment in overheads, or as an aid to computations of the direct cost of material and labor, without any of these structural indirect costs, we are very careful to eliminate all of these indirect expenses and to set them up separately, to make sure that the cost of material is purely the cost of material without any overheads. We even go so far as to endeavor to set up separately expenses which are applicable, not to single units but to groups of units, such as Tool Expense and supervision of a particular gang on a particular job, or supervision of a particular class of work like pole lines or [fol. 336] underground conduits, and the Motor Vehicle Expense. Such expenses can be set up by classes of property, and it is not necessary to handle those as broadly as in the case of Engineering, but it is necessary, when analyzing the experience of the Company, to separate direct material, direct labor, from the group loadings and from the

general indirect structural cost. The line of demarcation must be sharply drawn and the distinction carefully preserved. In any method of deriving reproduction cost of property it is necessary to know with the greatest certainty that the computations are definitely dealing with, for example, material purely, or labor purely, or with tool expense and similar group loadings.

In analyzing the Company's books to find the overheads or undistributed costs, overheads are not found, for instance, as a part of the cost of a pole in place, but engineering overheads would appear in the engineering accounts, Administration and Legal Costs would appear in one of the General Expense Accounts, and Insurance and Taxes would appear in appropriate accounts, and so forth. However, such items, in whatever accounts they are found, are included in the total aggregate cost of the property as carried in the plant accounts, with the exception that contingencies may or may not have happened, but if they have happened, they have been distributed in the appropriate account.

Referring to Plaintiff's Exhibit A-2, Balance Sheet, the [fol. 337] only item of cost which has not been distributed is the item of Interest During Construction. The failure to find there, the other items, leads me to believe that the costs of these other items have been distributed and have found their way into the aggregate book cost. The figure of $49,000,000 on Exhibit A-2, historical cost, and the total of $48,000,000 on Exhibit A-31, reproduction cost new, are two relatively comparable figures. That there would be very little difference between these two figures is to be expected when you have gone through relatively something near a cycle of price changes and have got back to the starting point, so that through a cycle of price changes a reproduction figure on a given date may come very close to the automatic collection of actual costs which have been accumulated through that same period of years over which the price cycle has been fluctuating. As to whether it is my experience that, where there is a long cycle of years embracing periods of prosperity and periods of depression, there is not much difference between actual cost and reproduction cost: My experience is that in the last few years there has not been a great deal of difference between reproduction cost and accumulated actual cost, but I have not

reasoned out the philosophy of it. They come close together.

As to whether in dealing with property not subject to peculiar circumstances such as a manufacturing or industrial property, it would save time and effort to take the book costs and apply a definite and reliable price trend so as to bring the book costs up-to-date: In a property which [fol. 338] is stable and not involved in a series of retirements and additions of considerable magnitude from year to year, I would endeavor to build up a trend for that property based on a reproduction price or on original cost for that particular property, and it is true that such a trend could be used to develop the momentary reproduction cost from year to year. But in doing that, two things must be watched; one of them is that your index represents that particular property that you are building up, and that means that the index must be made up of the trend of the particular things that go into the construction of that property. That is why I say I am afraid of the "All Commodity Index", because it is based on 784 odd things and the chances are, or you can demonstrate, that very few of them are probably in that property. The second thing is to be sure that there are not appreciable additions and retirements to that property year by year. Otherwise, you have got to modify and probably to develop your index numbers to represent the particular type or particular part of that manufacturing property which is coming in and out. If there are changes in that manufacturing or industrial property, you have to do the same thing that you do in a utility and develop not one trend or one index, but one trend or index for the different classes of property which made up that utility, so as to contrast from year to year the changes in the different parts of the property. The manufacturing property would be built up of land, buildings, machinery and, perhaps, experimental equipment of a considerable magnitude, depending upon its nature. These classes of property would not necessarily trend alike. In the case of [fol. 339] land I doubt if you could find a trend, at least, I have had no ability to prognosticate the trend of land, and we endeavor to keep that out of our trend and get some local advice as to what the value of that land is from time to time. As to all those types of property, if there are changes of appreciable size in that industrial property,

the index has to be broken down into a series of indexes which apply to the different parts of the property which are varying, not alike. Otherwise your index does not apply, and I think the great difficulty in the use of index numbers for appraisal purposes is that people try to make a single index do too much.

As to what is the value of such an index as the "All Commodity Index", and what is its purpose: It helps some people in the refreshing, intellectual pastime of trying to find out what the general price level may be, and they use it as a business barometer. As to whether that index has any relation to the value of money or is useful or is devised for the purpose of showing that in one year a dollar generally as compared with another year, was more or less valuable: I think it does show that to a limited extent. In the publications of the Department of Labor, in which the All-Commodities Index is presented, there is a section which deals with the purchasing power of the dollar expressed in terms of commodities. They are always careful to qualify their excursions into the value of the dollar by stating its value in terms of this commodity or that commodity.

[fol. 340] The "All Commodity Index" does not include all commodities, but represents about 784 commodities, which are a sample of the thousands of commodities which exist. Included in it are raw materials, semi-manufactured articles, and finished products. As to whether this index has been used in any work of appraisal by the Commissions for which I act in an advisory capacity: The All Commodity Index has never been used in any appraisal work with which I have been associated, and it has not come up in any of my work in public utilities.

Referring now to the development of short-cuts for the purpose of ascertaining the reproduction cost new of utility properties: In the basic method of estimating reproduction cost of utility property, there are developed unit costs, definitely and specifically, related to the construction of the kinds of property that are found to exist in the inventory. If it is desired to ascertain by some short-cut an approximation of that reproduction cost of a particular property, any quick method must still use the data, closely related to that which would be used in a complete pricing out of the property units for a well-detailed appraisal or reap-

praisal. For example, if the short-cut involves considering property units assembled in groups, then the group price that I would use in effect must amount approximately to the sum of what would be the so-called smaller unit prices for the particular property.

If the short-cut involves the use of an index number or [fol. 341] cost translator for a class of property, that index or that translator must be derived from a study of the costs of a representative sample of the particular class of the particular property. In other words, I do not feel that we can reach up on the statistical shelf and take down a ready-made index that we can put onto that property like a garment. For a utility system where the plant records have been carefully kept and the books are detailed and accurate, we can develop a substitute for a completely detailed reproduction cost appraisal which will be quicker and will be less expensive and will be approximately accurate within limits which we can accept. The problem has several elements. First, you need a starting point at which the quantities and costs of the property units are fixed. Second, correction is needed for the units of property added and for the units retired between the starting date and the date of inquiry. Third, it is necessary to change the costs of the various units in place on the starting date and subsequent additions in the respective years, to costs in place prevailing at the date of the inquiry. I would scrutinize in making up such a short-cut method, the various kinds and amounts of property at the starting time and the gross additions and gross retirements, to see if some parts of that property can be more expeditiously handled by a complete new pricing and to see what part can best be handled by repricing a sample which is a definite part of the whole group, and where group translators can be developed and applied to secure approximately the accuracy of an inventory and pricing.

[fol. 342] I would not seek to develop in advance a blanket index to apply to the property as a whole, because the property of that utility has a complex aggregation which is changing from time to time, and it comprises many various kinds of different units which my experience leads me to believe would not, at least might not, trend uniformly. In developing index numbers or multipliers in which I could have confidence, and which I would expect to give reason-

able results in accuracy, I have always found it necessary to develop or secure index numbers or cost translators that are applicable to a rather narrow band or zone of property items of the same, of closely the same general character. Such an index series should be specifically applicable to a large proportion of the class or sample for which it is developed, and it should be approximately applicable to the balance of that particular class, and it can be in doubt on only a small portion, a negligible portion of that particular class. These relations to the part of the property to which the index must apply closely, to the part to which the index can apply less closely and to the part that you can forget, can be developed by fixing the limit of accuracy within which you permit yourself to work, bearing in mind as you go along that you have to be closely accurate on a few items, approximately accurate on a great many items of a similar nature, and you may be only remotely accurate on a negligible quantity of items.

The short-cut, the substitute, or the approximate method [fol. 343] of arriving at reproduction cost, still requires the unit cost of the more important item of property at the starting date and at subsequent dates down to the date of inquiry. It is not necessary that the unit costs for the starting point or even for the intermediate dates should reflect accurately the reproduction conditions on that date. It is important in this short-cut method of arriving at approximate reproduction costs, that the unit costs employed as of the date of inquiry must and do accurately reflect the reproduction costs and the reproduction conditions on that date of inquiry. This consideration is fundamentally important because the method depends on building up a series of special cost translators.

By cost translator I mean a multipl-er which you apply to the costs of one date to convert them to the costs on another date. It is a ratio, a multiplier, a mathematical device, or an engineering tool. Cost translators are built up especially and solely to translate certain old figures which may be good, bad or indifferent, intrinsically in themselves, but this translator or multiplier is specifically built up to translate that old price into a present day price and that present day price must be accurate. It must represent present day prices and present day reproduction conditions. If you have a price or cost as of the present day

which is representative of reproduction unit costs, the multiplier or cost translator will convert the costs of a prior year into reproduction costs of the present day. The recip- [fol. 344] rocal of those cost translators will build up a series of numbers which people sometimes call an index, or you can build up your index and take the reciprocal of the index number and develop your multiplier.

The second requirement is that the unit costs used at the starting point, or for the intermediate dates, must be on one general price level of that date. If it is ten years ago, all the prices used of that date must be on the same general price level. You may quarrel as to whether that level is the actual price level or not, or whether that level represents reproduction cost ten years ago, but so long as the costs that you are translating are all on one price level, that is the only other requirement that must be observed. It does not make any difference whether that price level is correct or not because the index or multiplier, being developed to change the price as of a given time, whether that price be good, bad or indifferent, into an accurate price as of the date of inquiry, washes out any criticism that might be made of the earlier prices, provided always they are all on the same price level.

Summing this up, the present day costs must be truly reflective of present day prices and present day reproduction conditions, and the prices you may be using, as of a given time in the past, must be on the same price level.

There must be a special cost translator for a special class of property, for example, if we want to translate the costs of furniture, such as a grand piano, acquired in 1910 into [fol. 345] present day costs, I could not use a general price index for kitchen furniture, hardware and things around the house if I wanted to obtain results in which I had any confidence. As engineers we have to use tools we are confident are going to give us an answer within certain tolerances of accuracy, and we have to scrutinize at every point how accurate the prices we use represent the prices of that property. I would guess that the trend of prices of kitchen furniture would not be the same as the trend of prices on a grand piano, and I would not have any confidence in taking the price trend in kitchen furniture and applying it to grand pianos.

Nor would I have any more confidence in the result if I used the general trend of all furniture prices to reflect the trend in prices of pianos. I do not think there is anything gained by averaging a dozen trends, each one of which you know is wrong, or each one of which you are not sure is right. I do not think that anything is gained by scrambling them all together and hoping that the combination would apply to grand pianos. I am not able to test the result. I prefer to build up indices on costs of particular kinds of property to which we are applying them. Then I can test as I go along from time to time whether I am keeping within the limits of accuracy that I have set.

Taking a particular account like Aerial Wire, for instance, where unit costs are used to price out the total schedule and then to price out a sample of that schedule—which was one of the methods employed in this case in [fol. 346] order to obtain a factor which would apply to the sample when priced out at the date of inquiry: The older unit costs are used only for measuring the proportion of the sample to the total of the kind of property being studied. The older costs by which that ratio is determined could all be twice as great or they could all be half as great, and the answer would still be the same, namely, the relative size of the sample to the total. But the unit costs applied to the sample as of the date of inquiry have to be proper, since the figure for the total schedule which has been sampled is the cost of the sample at present day prices times the size ratio. You always come back to that point, that the present day cost being used must be right or else your answer is not right. What I have described is a specific illustration of the treatment of the property in the outside plant accounts. The representative or controlling items in each account in this group of accounts were priced out at the reproduction cost as of December 31, 1932 and this reproduction cost of the sample was multiplied by the size factor which was developed from other test costs.

I checked Mr. Speer and Mr. Gretz on this work, and went into their working papers and underlying data so as to familiarize myself with the methods that were being used. As to whether I had any opportunity to make checks on the [fol. 347] fundamental question whether the samples which were taken were fair samples of the whole: I made a very definite check. In these outside plant accounts, which consist of pole lines, aerial wire, aerial cable, and underground

conduit, a comparative few of the major items covered the major investment in an account, and these major items were fairly representative of all but a negligible amount of the remainder of the property in one of those accounts. For instance, in the case of the aerial wire account, I found in checking their work and reviewing their methods, that there were four items of aerial wire that amounted to 95.8% of the total investment. The total aerial wire account had 36.3% bare Copper Wire, and the sample had 35.5%, almost the same proportion in the sample as in the total account. The total account had 27.9% bare Iron Wire while the sample had 27.1%. The total account had insulated Drop Wire, 35.8%, and the sample had 37.4%. The items in the total account not represented at all in the sample were only 4/10 of 1% of the total account. There was 1.6% more insulated Drop Wire in the sample than in the total account, and correspondingly less bare Copper and Iron Wire. In that particular account it would require the trend of Copper and Iron Wire to depart 62% from the trend on insulated Drop Wire and the non-represented items to make 1% difference in the total account.

I regard that as a test of the representativeness of the sample and that runs through all of the other accounts, with varying and comparatively high percentage changes in the trends of represented and unrepresented items which would be required to affect the final answer for that account as much as 1%. To me that is conclusive evidence that the [fol. 348] sample was highly representative, first because the sample was a heavy percentage of the total account, and further because the proportions of the sample were almost identical with the proportions of the total account. That is what I call a highly representative sample. When conditions are like that I feel sure that the device which you are using, whether you call it an index or a multiplier or what not, is going to give you results which will closely approximate what you would have obtained if you had priced the whole account out in all of its multitude of detail. I made this check of the representative items for each and every one of these accounts.

While the range of variation between the trend of the non-represented items and the trend of the representative or controlling items comprising the sample would be required to be quite large before it would cause at least 1% change in the final reproduction cost of these accounts,

these divergencies would not all be in the same direction, but would be pluses and minuses. The larger the number of accounts, the greater the probability that in all the accounts taken together the divergencies both ways tend to neutralize each other and reduce the actual discrepancy.

In my review of the appraisal of the outside plant of the Company, I checked the 1932 reproduction unit costs used by the Company by checking them back into the price list [fol. 349] of the Western Electric, or, in the case of cement, sand, brick or gravel, into some other source of supply. I found the development of the unit costs of the principal items, both as to material and as to labor as used by the Company, were substantially correct. I also found that the method the Company followed in making the computations with regard to so-called exempt materials, supply expense and tool expense, were the reasonable results taken from the Company's experience on piecemeal construction, converted by judgment, in which I had to generally concur, so as to represent reproduction conditions. There were some items where I differed from the Company, which is what I would expect in going over the work of other people. On the whole, however, I found that in the appraisal these items had been resolved on the conservative side and against the Company.

As to the judgment which was applied to adjust the experience of the Company to represent a wholesale reproduction cost program: The change made in the experience of the Company to represent the change from piecemeal to wholesale, was as great or even greater than I would have made if I had been acting independently, so that in my opinion this judgment, insofar as it was exercised by the Company's representatives, has resulted in a conservative amount in the reproduction cost appraisal, that is, the judgment has been exercised to keep the amounts relatively low. [fol. 350] I also reviewed the Company's methods of estimating the reproduction cost of the Station Equipment group of accounts, and I checked through to see that those particular methods had been accurately applied. It was obvious right off that a special process was needed in estimating the reproduction cost of this so-called station equipment, in view of the nature of the Company's records and in view of the great difficulties of a complete reinventory and repricing. The Company's plant records did not show detailed units of the subscribers' station apparatus, the

block wires or the booth and special fittings, or the non-multiple or small private branch exchanges. The various records that I found to be available disclosed only the number of stations that were in service, the stations added and retired each year, the number of non-multiple private branch exchanges by types and sizes, and the number of booths by types and sizes. There had been an inventory of all station equipment plant in service in 1923, but since then additional items of plant have been developed. Therefore a complete set of reproduction unit costs of station equipment on a common price level was not available. There was an additional difficulty which I observed, in that retirements from these accounts, under the required accounting procedure of the Interstate Commerce Commission Uniform System of Accounts, are made at average book cost of stations in service at the year of the retirements. It was necessary, therefore, to develop a line of index numbers and cost translators to apply to the 1923 total account, and to the cost of additions and to the cost of retirements as made year by year since then.

[fol. 351] Starting with the year 1923, cost translators were built up to represent the ratio of cost of the station equipment in 1923 in relation to the cost in 1932 or 1933. It was necessary to price out a representative sample of all the station equipment in service in 1923, at the reproduction costs of 1923 and of 1932, to develop an index number and a cost translator which could be applied to the total of the appraised 1923 station account, that is, the cost translator of the sample was applied to the 1923 total of that account. This was done for each year, so that there was developed by this method, a translator to convert the costs of additions of any one single year into the reproduction costs as of December 31, 1932. Cost translators were developed separately for each year's additions to plant, all in relation to reproduction cost as of December, 1932, or 1933. These cost translators are merely an aggregation of special yearly cost translators having no connection or relation one to another. They are in no sense an index or a chain index.

As to the development of the multiplier for retirements: For the year 1924, for instance, there is available an accumulated book cost and accumulated reproduction cost for the account, and from this there can be developed a ratio of accumulated book costs to accumulated reproduction

costs, which furnished a special translator or multiplier by which the 1924 retirements at average 1924 costs can be converted to the equivalent 1932 reproduction costs. This method is followed in order to take out the retirements from the accumulated 1932 reproduction costs.

[fol. 352] As to Central Office Equipment: I reviewed the method, checked application of the method through the working papers, and followed the computations, checking many of them. In my opinion the method used was one that could be relied on to approximate within reasonable limits of accuracy the results of a detailed inventory and pricing of Central Office Equipment. It was necessary to develop a series of index numbers and cost translators for the years 1923 all the way down to 1932 and 1933, to convert the book cost to this reproduction basis as of 1932, for instance. In the application of this method the records of the Engineering Department were analyzed to find the property in the Central Office Equipment Account retired since 1923, but included in the 1923 reproduction cost estimate, with which they started. The Engineering Department records were analyzed for the gross retirements and the gross additions of each year since. The retirements since 1923 were deducted from the account as of 1923, or if placed since that time, as of the years when they were placed, so that they would be deducted at the proper cost levels. The 1923 reproduction cost of the property still in service was trended to 1932 and 1933, and the additions were handled as of the years of contract.

The Company's engineer, Mr. Speer, had divided the central offices into several groups and I followed his methods through all of the groups. I heard him testify as to the tests he had made as to the representative nature of the offices in his groups. Based partly on my checking of his [fol. 353] methods and partly on the tests which I myself made, I concur in the statements which he made on this point.

From the tests which I personally made and from the information which I obtained in checking the working papers of the Company, it is my opinion that the application of the indexes developed in the way these have been developed, would, in the aggregate, produce a close approximation of the reproduction cost of the central office equipment.

(Thereupon, when the witness was proceeding to describe and testify as to the separate tests which he personally had made, Counsel for the Commission waived proof of the tests, admitting that if described they would be just as thorough as those given by the witness for other items of property. Whereupon the Court stated that the proof was not necessary.)

In my check and review of the Company's methods, I found nothing in the directly distributed cost which included anything that was included under the item "Undistributed Structural Costs". There is no duplication in the items of the directly distributed costs and the items of Undistributed Construction Costs.

I did not make a check of the item of Interest during Construction, but testing that solely from my general experience I am of the opinion that the amount of 5.5% shown by Mr. Gretz for Interest during Construction, and com- [fol. 354] puted on a percentage basis by Mr. Sloan, is reasonable and about what I would expect. The amount is less than one year's interest on the property and I have found that in cases involving widely different properties, with all sorts of construction programs, that Interest during Construction could not be reduced much below one year's interest on the property being built.

I made no checks with regard to lands and buildings, nor as to the items shown as "Property not Specifically Appraised". Subject to a reservation as to the items not checked by me, I believe that the results shown on Exhibit A-31, as of December 31, 1932, and on Exhibit A-32, as of December 31, 1933, represent a fair statement of the reproduction cost of the property included therein as of the respective dates mentioned.

Cross-examination:

I would rather not testify as an expert on general index numbers and I would not want to undertake to say who were experts in the field of general index numbers in this country. I would not feel competent to express any views, other than I did on direct examination, as to whether the All-Commodity Index is an adequate measure of the purchasing power of the dollar.

[fol. 355] In direct examination it was called to my attention that the reproduction cost of the Company is very near the historical cost, and I said that this was an effect that I had experienced, but that I was not so sure of the reasons. I am Engineer for the Vermont Public Service Commission and testified in the case of the Green Mountain Power Corporation, the decision in which was handed down by the Vermont Commission January 12, 1933, and is reported in Public Utility Reports 1933 D, page 519.

(Thereupon Counsel for Defendants read the following extract from the Vermont Commission's Opinion, at page 520 of the volume indicated:)

"With respect to the depreciable property entering into the rate base, part of the values were from the inventory and appraisal of 1928 in security case No. 1689 to which was added subsequent additions at cost. Objection was raised that as prices of certain commodities used in the construction of a gas plant were somewhat lower now than in 1928 and that spot prices of recent additions were lower than those carried on the books of the company, the rate base should be less than the reproduction cost as developed by Mr. Barker."

[fol. 356] This quotation would seem to indicate that the reproduction cost to which I testified in that case was somewhat greater than the historical cost. I have forgotten the details of it but the property had passed through several hands. I introduced only a spot reproduction cost of the property and the complainant introduced some separate evidence of price of gas plant construction, equipment and material. In a reproduction of a plant I would use as the cost of material the best, most advantageous purchase cost I could get for the things I wanted in the reproduction.

As to whether I would agree with the Vermont Commission that distress prices should be overlooked and the rate base kept higher on that account: Not if I were making spot reproduction cost. The Commission might be exercising its judgment as to value at a very low spot reproduction cost time, but if I had the job of telling what the spot reproduction cost was, I would have to take the prices on that date.

As to whether I regard it to be more or less the usual thing that historical cost and reproduction cost are coming

close together: I think I said on direct examination that it was my recent experience that historical cost and reproduction cost were coming closer together. I should think that one of the major influences would be the relationship of the prices at which the property had been bought and the prices at the present time. I mean by historical cost where you have good records of the actual costs of construction [fol. 357] and not these so-called historical costs which are experienced in some utilities of speculative purchases or on the other hand, of distress purchases, perhaps in receivership. I do not have any theory as to the relationship between historical cost and reproduction cost, but I did say that I would expect the cycle of changes in the prices of materials to be a major influence. I have not reasoned it out and all I can testify to is what I found.

In the check which I made on the work of Mr. Speer and Mr. Gretz, I accepted the prices as I found them in the price list of the Western Electric Company. I made no effort to pass judgment on the question of whether those prices were fair from the standpoint of fair value.

[fol. 358] WILLIAM F. SLOAN, a witness of lawful age, was produced by and on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, plaintiff, and testified as follows:

Direct examination:

I am a graduate of the University of Wisconsin in the electrical engineering course and have had operating experience with several of the large utility companies, the Union Light & Power, of St. Louis; the Commonwealth Edison Company, of Chicago, and B. J. Arnold & Company, of Chicago. I was also electrical engineer for the Wisconsin Commission from 1907 to 1913. Since 1913 I have been engaged very largely in consulting practice and have appraised utility properties in many parts of the United States. In 1918 I was in the Army and was transferred from the Army to the Post Office Department by President Wilson to act as engineer adviser to the Postmaster-General during the time that the Government had the wire

service. I have acted also as consulting engineer to the Manitoba Government during the time they were converting their telephone system from the manual to the automatic.

I have done work for a number of cities and municipalities and for the United States. I have appraised a very large amount of utility property since 1913 and have made valuations both for companies and for commissions and [fol. 359] cities. I have been engaged almost continuously since 1907 in ascertaining the amount of actual depreciation that properties have incurred, and have made such examinations for commissions as well as for companies.

I made an examination of the property of The Chesapeake and Potomac Telephone Company of Baltimore City, first for the purpose of ascertaining how much depreciation there was in the various items as of December 31, 1932, and made a second examination for the purpose of ascertaining the situation on December 31, 1933. I testified before the Commission in this case as to depreciation as of December, 1932. In making such a valuation, I have a staff of engineers, trained engineers, who are largely engaged most of their time on this particular kind of work, together with the general appraisal of utility properties. A year ago I had ten such men in Maryland, and we spent a very considerable amount of time, approximately three months, in determining the actual amount of depreciation that exists in the property. I have prepared a summary of the result of my work.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-34".)

In the investigation of the amount of actual depreciation that I found existing in these different classes of property, I did not for instance examine every telephone pole. No engineer would have done that, and I do not think it would [fol. 360] be necessary. We started out with the idea of examining 10% of all of the property of the Company. We inspected the cable on poles, the cross-arms and the wire on the poles. When we came to the underground part of the construction, we opened every tenth manhole in the City of Baltimore and in the other towns that had underground construction.

If you take a large property and take 10% of it, you can get a typical cross-section of that property, in my opinion, and the per cent. condition of that cross-section is a typical

representation of the per cent. condition of all of the property. I tried to take 10% of each kind of item. For example, I tried to examine carefully the condition of each tenth pole. In the case of poles, the men who did the inspection work were equipped with little axes, and they would pick away the dirt and find the depth of the rot on the pole. The original circumference was taken as standard, at the ground line, the reduced area after the rot had been cut away ascertained, and the ratio of good wood to the total wood was taken after first assigning a certain minimum amount or quantity which represented the zero per cent. condition. We did not take just the remaining area to the total area, because there is always a minimum area that represents the minimum amount that is permissible and still have the pole stand.

In examining central office equipment and other items, I adopted the following method: The ordinary manual switchboard is composed in general of two major parts, those [fol. 361] parts that wear and are subject to use and other inert parts which lie constantly without motion, for instance, the cable and the switchboard framework, and things of that type, that are not subject to any wear due to use. One of the major items on a switchboard where wear occurs are the jacks. Those jacks constitute about 14% of the cost of the material in a switchboard, and there are many thousands of them. Generally they are arranged in groups 8,000 to 10,000 per group, and the number of groups is dependent on the number of sections in the board. For instance, some of the larger boards might have 15 or 20 sections with 8,000 or 10,000 jacks in each section. We measured 10% of all those jacks with a micrometer gauge. Our men would go to these offices at night when the traffic was very light and insert the micrometer gauges in the jacks and measure the actual wear and tear that had taken place.

This method of inspecting only a certain percentage of units that occur in great numbers and which resemble each other very closely, is a well known and accepted engineering practice. The Illinois and Wisconsin Commissions have their engineers take 10% of any property, either for per cent. condition or for accuracy of inventory. We make other tests of switchboards. For instance, the cords that are used for making connections by inserting one end in one

jack and the other end in another jack, are subject to wear. The plugs that enter the jacks are also subject to wear. We measure the plugs with an appropriate caliper to deter- [fol. 362] mine the wear and tear of those. Cords wear out where they bend at the end. Each cord is capable of being cut back about six times, and when they are new provision is made for six cut-backs. We determined the condition of those cords by counting the remaining number of cuts that were still left on the cord. We measured the wear that had occurred on the jacks, and on the plugs. On the items that do not move, like cable and the frameworks and retardation coils, and various things, of that kind, there is no method of measuring the wear of them, but they can be inspected, particularly the cables, and you can see the condition of the cable, whether it is frayed, or whether there is evidence of wear or broken insulation or things of that sort.

My percentages of condition are not predicated on the useful life of the article, nor are they based on any life table. Illustrating by means of a pole: Suppose the total area of the cross-section at the base was 100 square inches, and that 20 square inches is the minimum amount which could be permitted as the factor of safety. Of the remaining 80 inches or 80%, if 40 inches of the 80 are gone, then the pole is in 50% condition. I applied similar methods generally to all of the ten or twelve classes of property shown in Exhibit A-34, except of course that it is not possible to measure many things in the same degree that you can poles and jacks and things of that kind.

[fol. 363] There are other types of plant, the condition of which must be determined purely by inspection. Illustrating that by underground cable: One of the largest items of investment in the whole property is underground cable, some five or six million dollars in that one item alone. Underground cable is a large lead tube enclosing generally a considerable number of insulated copper wires. In general, it is just an inert mass of lead and copper, lying in the underground conduits in the streets. There are only a relatively few things that can happen to plant of that type. One of the grave dangers that happens occasionally is electrolysis. If the leakage from the street railway current gets in there, it is apt to make holes in that sheath. Except for electrolysis, and for mechanical injuries, like a dredger, or something going over the street and breaking

it, or a workman going along and driving his pick in it, or a workman going down in a manhole and stepping on the cable, or bending it, which is about all that can happen to that sort of property. Otherwise, it just lies there indefinitely. Of course, we could not dig up the streets to see the condition of this cable between the manholes, but we went into each tenth manhole and looked at the cable in the manholes there for bends, dents and bruises, and whatever may have happened in the manholes. We also went to the central office and got a record of the number of bad pairs in each particular cable. There is always a certain number of pairs which may be bad. Say a cable has one hundred pairs of wires in it, sometimes 2%, sometimes 3%, sometimes 4% may be bad. And part of that trouble might [fol. 364] not have been in the cable, but in the terminal outside of the cable. At least for the time being that pair is dead, if it momentarily cannot be used. About half of bad pairs ordinarily, sometimes even 70%, can be cleared up with just minor work. But we got the record of the bad pairs in total, not making any deduction for the ones that could be repaired with minor repairs and found something under 4% of bad pairs. We considered the condition of the cable as we found it in the manholes, and the plant people's records of cable troubles. They keep a record that discloses the number of cases of trouble they have on their cable system by years. With that information, and our own inspection of the property, we arrived at the per cent. condition for the cable.

We also took account of obsolescence. There are certain types of property that we considered obsolete, and depreciated very heavily for that reason. Certain types of keys in the manual switchboards are obsolete, and not necessarily useful any more, and we depreciated those to zero. A certain part of the underground duct system is of an obsolete type, in very poor condition, though in use, and we wrote that down to 10%. There is also some old wooden type of duct, which is of rather an old type. This was not in particularly good condition, and as I considered it obsolete, I wrote that down very heavily. So that anything that we considered of an obsolete nature has been written down. There are other types of plant that are only obsolete in the sense that a new type is probably out that is somewhat [fol. 365] cheaper. For instance, the old type of line and

cut-off relays, there is a new one out that does not do any better work particularly, but it is somewhat cheaper. The old type of relay has been priced in the inventory itself at a cheaper price, so any obsolescence of that type is already taken care of. We found no inadequancy in the property at all. The property is entirely adequate. We have not only taken care of actual depreciation of physical property, due to wear and tear, whatever has occurred in the length of time that it has been here, but we have also deducted everything that should be deducted for obsolescence and inadequacy. The percentage depreciation on manual equipment is greater than that on dial equipment. This is because the manual board has a large volume of wearing parts which are subject to quite heavy wear, and it is my opinion that the wear on the manual board is greater than on the dial board.

In making our survey of accrued depreciation as of December 31, 1932, we were in Maryland during the months of January, February, March and April, 1933. I had ten men here who put in 547 days on the work, and in addition I put in 41 days of my own time. To bring the study up to December 31, 1933, took less time. The last time we only inspected 5% of the property instead of 10%. I had 7 men here who put in a total of 136 days. In 1932 we inspected 6244 miles of iron wire; 3519 miles of copper wire; 9308 [fol. 366] drop wires, and approximately half as much as this for the last time. The Exhibit A-34 gives only the final results of the two surveys. We had maps of each exchange district on which the local property was plotted and the men who inspected that particular type of property indicated on the maps the actual property inspected and this was also recorded in the field notes. I have the work sheets and all of the maps and field notes in Court available for examination. The two tables embodied in Exhibit A-34 express my best judgment as to the amount of actual depreciation existing in all the classes of property in the Telephone Company.

As to some of the undistributed construction costs included in the estimate of reproduction cost to which Mr. Gretz has testified, I made a study of what they would amount to in a general reconstruction. The exhibit relating to that includes taxes and interest during construction, but does not include insurance. Explaining why taxes and

interest are incurred in construction: If any project is started and money is spent on it from time to time, there will be an interest charge on the money until the property can be cut into service. From that time on it is either supposed to carry itself, or if it does not, interest is no longer a proper charge against construction, so that when the property goes into service it is considered that the construction charges end, whether it is earning money or not.

[fol. 367] (Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-35".)

With reference to taxes, I am aware of the practice prevailing in Maryland under which only property that is substantially completed is subject to assessment, that is, if a building is half finished, it is not subject to assessment, but it if it — practically ready for beneficial occupancy or use then it is subject to taxes. Having that practice in mind, I have calculated the taxes on the amount of the property that has reached the condition of beneficial occupancy at the various steps of the construction program. The first sheet on Exhibit A-35 represents that calculation and is called "Taxes During Construction".

The second sheet called "Interest During Construction", purports to show how much interest during construction would be incurred if you built this property new. For convenience, I have divided the building period up into quarters. There are various ways of building a property; you can build it in three years, during which you would incur certain interest charges and certain taxes. You can more nearly approximate the way the Company builds it if you cut a large amount of it into service after a reasonable period and then rapidly cut the rest into service, and in that way keep your charges down. I have proceeded on the general theory that the longer you string it out, the less your interest charges would be, because you are getting parts of it cut into service.

[fol. 367a] I have selected a program of construction which, in my opinion, will give a minimum amount for taxes and interest during construction, and have selected a six year building program. I do not mean by this that the property could not be built in less than six years. It could be built in three years, but if it were it would cost decidedly more. I have adopted what I think is the most economical pro-

gram. There is relatively little taxes or interest during construction during the first three-quarters, which are what I call the development period, when you are making your engineering plans and studies and you spend a small proportion of the total amount of money in that period.

On the first page of Exhibit A-35, I have set out here the way that I think would be the best way to spend the money to keep your interest and taxes down to a reasonable figure. I have shown the expenditures by three-month periods by quarters over the entire six-year period, and then it is just a simple matter to total up those expenditures by quarters and calculate the interest on them, and that interest calculation is shown on the second page of the exhibit. The first column is just the accumulated amount of money that has been expended in each of the several quarters in the period, and then beginning in the eleventh quarter you will notice about $16,000,000 of property has been completed and ready for service, so interest stops on that immediately. [fol. 368] There is no further interest charge on that $16,000,000. In the twelfth quarter, there has been a total of $19,000,000 cut in. The only amount of plant that carries interest is the difference between the amount that has been constructed each quarter and the amount that has been cut into service.

There are various ways of calculating interest. The way that I used in this Exhibit is on the basis that the money would be obtained at the beginning of each quarter for the expenditures of that particular quarter. If you are going to do $10,000 worth of work in the next three months, you borrow $10,000, and, of course, you pay interest on it, and that is the way these particular calculations have been made. There are other ways it can be done. A company might be able to borrow their money each month. As a matter of fact, this Company does borrow money each month, as they need it, and the interest on this amount is paid monthly. This particular calculation I have here has no compounding feature added to it, but is simple interest on the assumption the money is borrowed every three months at the beginning of each quarter. I think compounding would be perfectly proper, as actually you would pay compound interest on it certainly every six months. I have made other calculations on the basis of borrowing the money at the beginning of each month and compounding

it every six months, and the result is substantially the same, being slightly greater than the result on the basis I am using. My interest during construction figures 5½%, which taking interest at the rate of 6% per annum as I did, is less than one year's interest on the total property.

As to the figures which appear in Exhibit A-31, lines 15 [fol. 369] and 16, I furnished to Mr. Gretz the results of my study and he applied these results to the final figures as he testified. As to insurance, I have no exhibit but took the direct labor in the Company's appraisal, about $8,600,000, and for compensation and liability insurance took $3.00 per $100 on the dollars of direct labor. This does not include any labor for the central office equipment or for the buildings, or in other words, any labor that would be furnished by a contractor. My figure for Insurance during Construction is $260,302, and Taxes During Construction $282,730.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-36".)

This exhibit, A-36, is a calculation to determine what I think would be the cost of developing the business of the Company, and it ties in with the reproduction calculations that have been put in in previous exhibits. My thought about cost of establishing business is that any company in its ordinary progress of conducting its affairs, incurs certain costs in the way of developing its business. For instance, the training of its personnel is a very heavy expenditure that companies generally make. It costs this Company and all other large telephone companies around $200 and $250 to train each of the operators. The skilled supervisors, the heads of the traffic, commercial, accounting and engineering departments are men who, in addition to their education in their particular field, have taken special [fol. 370] training in the Company to acquaint them with the peculiar duties and work that they have to do in the conduct of the telephone business. The training of the personnel is an actual and a very tangible item of cost of establishing a business.

I have also given consideration to the fact that if the property were being reproduced, it would naturally for a short period be in excess of the immediate requirements of the subscribers' business that could be attached. It is much

the same as in the building of an office building or a hotel. The project is carried through to completion and very frequently, in fact, generally, I would say there is a period of time elapses between the completion of construction of the building until it is filled with tenants. There are fixed charges and carrying charges of that type of investment that must be met. In addition to that, subscribers cannot be obtained without the expenditure of money in the way of advertising and canvassing, even under a theory that people are in general acquainted with the advantages of telephone service. I have in mind going value which the Company now has; it is reproduction of that. That going value was of course acquired over a long period of time, ever since the Company started. There is no such item on the books of the Company as going value in its capital assets. It is my understanding that this has no direct relation to any capital items of assets that are carried on the Company's books.

The second sheet of Exhibit A-36 shows the items of how [fol. 371] I figure the carrying charges. If you refer to the second of the long sheets which were put in evidence before (Exhibit A-35, sheet 4), you will notice at the bottom accumulative cost of the plant as it has been constructed. The second sheet of Exhibit A-35 that I put in for interest shows that beginning with the eleventh quarter a very considerable amount of plant was cut into service. In the interest calculation, the first item for the eleventh quarter is $16,420,000. That same figure plus the accumulated interest has been carried forward on this sheet which I am now discussing, and the $18,215,782, represents the cumulative amount of plant cut into service in the eleventh quarter, likewise for the succeeding quarters. These amounts are the same as shown on the interest calculation sheet, with the addition of the interest, and are based on a calculation and not on some rough guess or estimate.

Cost of securing subscribers was based on a study of the advertising and soliciting costs that the Company has actually experienced during a period when they were acquiring large numbers of telephones. The actual cost for advertising and soliciting during the period 1925 to 1930, was slightly over $12 per telephone. I have calculated that, on a reproduction theory where the number of subscribers was being taken on in relatively large amounts, about two-

thirds of that amount or $8, would be a proper allowance for advertising and soliciting during the period. Multiply-
[fol. 372] ing $8 a telephone by the total number of telephones attached, gives the figure of $1,665,272. This calculation is the same as the one I testified to before the Commission. My work sheets were available to the other side insofar as they wanted to check them.

In connection with the next item of training personnel, I have taken the number of people in each of the five major departments, Traffic, Commercial, Engineering, Accounting and Plant. I made a rather detailed study of the training costs that the Company has actually had in training these people, and what I estimate would be incurred in case some of them were not trained, but moved in from another company, assuming that some of them could be obtained in that way. The figure of $1,291,832 is based on training 1,781 people in the traffic department, 263 people in the commercial department, 22 engineers, 189 people in the accounting department, and 920 in the plant department. For instance, in the traffic department there are 1,004 local operators in Baltimore, which I have calculated at $200 per operator. There are 297 local operators in smaller exchanges, outside of Baltimore, at $100 per operator. There are 295 toll operators in Baltimore, at $340 per operator. There are 195 toll operators outside of Baltimore, at $240. That gives $417,200 for the training of the traffic people. These training costs equate to about three months of the salaries of the people in these various departments. Whether considered as a training cost, or as cost of the employees for two or three months before you actually be-
[fol. 373] gan the service, it amounts to about the same thing. The summation of all those items in the various accounts is the figure shown on page 1 of Exhibit A-36.

The next item is development of the forms and methods. The Company has a large number of various types and forms and routine methods, and so forth, that have been developed over a period of years. They are the result of the changes from time to time in developing the best forms and routines for conducting the various affairs of the Company. There has been no item included for that type of property in the appraisal of the physical property, nor does it appear in the balance sheet. Some of the forms, etc. were figured at $100 and some at lesser amounts, as the cost to

develop and perfect these types and forms that the Company uses. No allowance has been made for any kind of forms that are supplied by the A. T. & T. Only the forms and methods that are company wide forms have been included, these being local forms, and about one-fourth of the cost of forms that are used by the Chesapeake and Potomac group.

The last item is the first issue of a directory. There must be at least one copy of the directory to begin operations. After the plant is cut into service, of course, it becomes an operating charge from that point on. I have not assumed that the expense of preparing the initial directory requires more work than the subsequent publications. I have just taken the normal cost of one issue, though, as a matter of fact, I presume it would cost more. I take the cost per subscriber and multiply it by the number of subscribers, on the basis that each subscriber would get one copy of the directory.

[fol. 374] The sum of all of those items is some $7,000,000, which is about 15% of the cost of the reproduction of the property, before this item. This amount of something over $7,000,000 is not carried in any of the general tabulations that have been offered in evidence, but on the contrary, an item of $4,500,000 is shown in them. I furnished that figure. There is no change in that respect as to my testimony before the Commission. The $4,500,000, expressed in percentage is slightly under 9%. I did not cut the reproduction cost of establishing business from 15 to 9%. That is not the way I look at this matter. There are many evidences of Going Value, and I do not know that the cost of establishing business is the only measure of Going Value, though it is certainly to my mind a very convincing evidence of the fact that there is going value in a property. It is a guide in arriving at a considered judgment of what a proper allowance for Going Value is. There are a number of court decisions in which Going Value has been estimated or allowed in sums ranging from 7% to 15%. The usual way of referring to it is a percentage of the total value. I do not think that courts arrive at it by adopting a percentage, but after considering the evidence and fixing the amount it is then converted to a percentage. I was the witness in the Chicago Telephone Case through whom the Company sought to establish Going Value. I testified

there on similar lines to my exhibit here, which produced 15%, and the Court allowed 8%. I was not a witness in the New York case. All you can do is make up your best estimate of the expenditures that you feel would be incurred, and the calculation as made is certainly within the [fol. 375] top of the limits of the amounts that have been allowed by many courts and commissions.

I considered that the cost of establishing the business was one evidence of Going Value. I considered also the number of decisions that courts have made. My limit is 15%. There are a few decisions where that has been allowed. There are other cases where it has allowed 7% and 8%, one case 2%. I think that is the lowest I know of, however. I considered the amount for Going Value is primarily a matter of judgment. I do not think that it can be reduced entirely to a matter of formula, and in some properties of which I know something, and which are no better properties than this Maryland property, there has been allowed an amount equal to 8% to 9%. And it is really a matter of my judgment rather than a cutting of any figure. It is just what I figure is certainly a minimum and fair allowance for Going Value in this case. There is no doubt whatever in my mind that there is a very substantial item for value in this property that comes under the head of Going Value. In my opinion, it amounts to at least $4,500,000; I think that is the minimum amount. I do not think that one company twice as big as the other would have the same going value.

It is true that many of these expenses have been paid out of operating expenses. It may be true that the Company has incurred expense to build up its business and that it has been paid for out of its operating allowances, if they had received a completely adequate rate of return during [fol. 376] the whole period. I am not in a position to state whether they have or not. I suppose prior to the period of regulation they may have had a period when they were not earning so much and did not get better rates. I think that the allowance of 3% in the 1923 case was extremely low. One way of looking at it, is this; in other cases where conditions were no different and the properties no better, perhaps in some cases not as good, the allowance has been 8% and 9%. Where allowances of 8% to 15% have been made, the valuation has been on the reproduction theory,

and that is the way I am looking at the matter, that if the property were to be reproduced you would certainly incur charges equal to the amount that I have estimated. Of course I am looking at it purely from an engineer's viewpoint, and if you would reproduce the property, you have to reproduce the whole property. When you get into the theory of rate-making, I am just offering that as an evidence of what value attaches to the physical property in addition to its fair worth. It is my position that I am not testifying as to whether or not the cost of the property that was acquired out of income in the past at the rates that were allowed, ought to be included or not. I am simply taking it from the engineering and objective standpoint of what it is now worth.

In answer to the Court's question as to my definition of [fol. 377] Going Value, I would like to read a statement from the McCardle Case, from the Opinion of Justice Butler of the Supreme Court. It comes nearer expressing my idea of what Going Value is than any language that I recall at the moment:

"A good property has an intangible value or going concern value over and above the value of the component parts of the physical property. Any reasonable man with a knowledge of this property and the local conditions would unhesitatingly affirm that it had a value far in excess of the value of the pipe, buildings, grounds and machinery. Consider its earning power with low rates, the business it has attached, its fine public relations, its credit, the nature of the city and the certainty of large future growth, the way the property is planned and is being extended with the future needs of the city in view, its operating efficiency and standard of maintenance, its desirability as compared with similar properties in other cities and with other utilities of comparable size in this city. These things make up an element of value that is actual and not speculative. It would be considered by a buyer or seller of the property or by a buyer or seller of its securities."

[fol. 378] It would be true that if a telephone company made a fair return from the moment it began its history, that the expense of integrating the thing in the way described in what I have just read comes out of operating expenses. I also think it is true that if you assume that the

utility did not earn a reasonable rate for the first five or ten years of its existence, then its cost of integration came out of the pockets of the investors, to the extent that they did not get a fair return.

Cross-examination:

I stated that Going Value would be different in accordance with the size of the property. In answer to the question why in 1925 my estimate of Going Value for this Company was $5,388,000, and my estimate in 1933 is $4,500,000, when the Court found in 1925 a value of $29,000,000 and the cost of the present company is approximately $50,000,000; if you look at my old report you will find that is not a discrepancy. That was not called Going Value in the old report. It was called "Cost of establishing business", and corresponds to the figure which I now say is $7,000,000. If I had gone on the same basis in this case as I did in 1925, I would have claimed $7,000,000 in this case.

[fol. 379] The difference in the size of the property has caused me to change my mind since then. In 1925 I added in the figure of something over $5,000,000 as the cost of establishing business. I think they are in about the same proportion in the two cases. In 1925 my valuation was about $32,000,000, without Going Value, so that the figure of $5,000,000 was about 15% or 16%. To put it on a corresponding basis, you take what percentage $7,000,000 is of $50,000,000. I did not put them on a corresponding basis, because in the 1925 case I put in the cost of establishing the business. As to whether I have changed my mind and have now taken only a portion of the cost of establishing business: I have not changed my mind. I think the cost of establishing the business is the same, approximately the same, in both cases, as I remember it. However, I have not taken the full cost of establishing the business as the measure of Going Value.

The figure of over $5,000,000 in 1925 comes to about 16½% of the figure of slightly over $32,000,000, which was my valuation in 1925 without including Going Value. My present figure is about $7,100,000 on a figure of about $48,000,000, which is 15%. They have both been labeled "Cost of Establishing Business". I have forgotten what I testified in the 1925 case, but I think if I had expressed an opinion on Going Value, it would have been less than $5,000,000.

[fol. 380] I am not connected with the A. T. & T. A considerable amount of my work in recent years has been in giving testimony for the A. T. & T. associated companies. I have testified in quite a few rate cases of all kinds in recent years, in the last ten years I think at least twenty-five. I have never acted as consulting engineer in the actual construction of a telephone property of this size. I will not say that there has never been a construction of this kind under a six year period in the United States. I know that the gross additions of the Chicago Company, for instance, run about $20,000,000 to $25,000,000 a year, while this reproduction program would run about $8,000,000 per year.

In making the inspection of the property to find depreciation, the assistants whom I employed were members of my engineering staff. The youngest one was 28 years old, and the oldest 39. They inspected 10% of the property. I made a general inspection of, I would say, 80% of the property. I visited all of the exchanges and rode over all of the important toll lines and saw all of the major plants. But I did check 10% of what the men had done in detail as a matter of unifying their various personal work in arriving at measurements and results of inspection of the various types of property. It is true that I necessarily had to rely to some extent on their judgment. My own estimates of percentages of impairment involve judgment on my part. You can measure that with a micrometer on those parts of the plant that are subject to measurements. On other parts there is an element of judgment involved.

[fol. 381] I did not make any check to determine whether the 10% of the property, which my assistants and I inspected, was of the average age of the total property of the same class. We just took 10% as it came. Neither I personally nor my assistants knew with respect to any item or with respect to the class of that item, what was its actual or average age within the class. We did not divide the age by the life. We did consider the effects of age and whatever had happened to the property during the time it had been there, was observed and considered. I do not recall testifying before the Commission that if I saw the effect of age, I made allowance for it, and if I did not see it, that I did not make allowance for it. That was not the general purport of my testimony. Let us take a specific example: My men made very careful measurements of the rot, the

cracks and the general defects of the untreated poles, of which there are a considerable number in the state. The composite measurement of those observations when totaled came out some 64% condition, and applying my own judgment I reduced that condition still further to determine its actual accrued depreciation.

As to the question whether I was considering market value or condition of efficiency, I was certainly not considering market value. In the case of the poles, I was trying to find what proportion of the utility of that pole had been worn away or disappeared. If I was representing a prospective purchaser of property, and I have represented purchasers in a number of cases, I do not think I would want [fol. 382] to know how old it was. I observed the condition of the property from my own knowledge of it.

I think it might be a better term to say that I had taken obsoleteness into account, rather than obsolescence. Whatever is there now I have taken into account. As to whether there are parts of machines which could not be examined: You could tear apart large electrical machines to examine them, but you don't as a practical matter, and I did not make such an inspection.

Assuming that a switchboard was perfectly adequate for present subscribers, but that it was coming out within a month due to the fact that new subscribers were to be attached, I would not deduct anything from its physical value for that reason. I did not make any check of the remaining service life with reference to the present age of any piece of property or any class of property. I have not used the age life theory at all. All I have taken is the accrued depreciation that actually exists today, and when I say actually exists, I mean what I find by observation, and the exercise of my judgment as to what is there. I have made additional allowances besides what I saw there. It is based primarily on the inspection of the property.

I did not undertake to make any check between my percentages and the balance in the Company's depreciation reserve, and I do not think there is any relation between those two figures. I do not think, except under very unusual conditions, that the amount of depreciation existing [fol. 383] in the property will ever or should ever equal the amount in the reserve. I do not mean by this that the Com-

pany has been collecting for the past few years from its subscribers more than it needs for depreciation. I have not gone into the question as to when the Company will need the difference between the present reserve and the 13% that I find is actual depreciation. But here is the situation: So many of the things that cause retirement of the property do not affect its physical value in the slightest degree. For instance, copper wire, of which there are thousands of miles in the State of Maryland, would last 100 years, maybe 200 years, and yet its average life is only about 20 or 25. It is very seldom retired because of any wear or tear, but retirement may be due to change in method or to a sudden thing like the storm which occurred here two years ago. The condition of underground cable, in general is very seldom impaired, except a few per cent., yet it is retired on an average of, say, 15 to 20 years. When it is retired, from whatever cause, it costs the Company money. All I am trying to tell you is the condition that the property is in. Most of the causes of retirement do not affect the physical condition of it in the slightest degree. I am not concerned with value, I am concerned with the condition of the property, and I am trying to tell you from an engineering standpoint what condition this property is in.

Q. (Judge Soper:) May I ask you to develop that a little bit? I am not sure that I understand it. When you get [fol. 384] your result on your method, do you consider that you have arrived at the right amount of depreciation from a practical standpoint? That question is suggested by this; even if the thing has a possible life of a certain length, yet if you as a practical man, think that it is going out of service in a very much shorter period, it would not, of course, be right for you to take the figure for the longer life, you would have to take it for the shorter life, wouldn't you, in order to get the right result of the practical amount of depreciation?

A. As I look at it, I think there are two things that should be considered. I am only testifying as to what is there, as it actually is. If the copper wire is in 100% condition, or 95%, that is what I tell you about. Now, the matter of deduction of the amount of reserve and things of that kind are matters that I think are legal arguments, that I am not trying to consider at all.

(The witness continued:)

I put down the condition the property is in, considering all causes which have affected it to date. If I were adopting what the Court calls a practical figure, indicating not a theoretical life but an actual life, I do not think that [fol. 385] I would change the composite 13% into 25% or some higher figure. I look at it purely from an engineering viewpoint that that is the condition of the property, and that it would not operate efficiently if it were in a lower condition.

Q. (Judge Soper:) No, I am trying to get at the thing in a practical way in which I can understand it. Suppose the Telephone Company had told you to go out and make this investigation, not with the idea of arriving at the figure that you have arrived at, but with the idea of having your judgment as a practical man how long this thing was going to last. If we say that a thing is 20% of, if we say that the normal life of the thing is 20 years, and it is 25%, why, then, it has got 15 more years to live. Now, if you had gone out on that basis, you would not have brought back this percentage of 14%, would you?

A. No, probably not, no.

[fol. 386] (The witness continued:)

Without making a study of that, I would not know what that figure would result in. It would probably be somewhat different. I have never in any of these cases been asked to do that sort of thing. My investigations have to do with the actual accrued depreciation that exists. I think that is the only thing that is actual; I think the other is a speculative thing.

Illustrating this with the case of copper wire, the copper wire may be down in 5 years from now; we will say it has been there 15 years, and you know it is coming down in 5 years; that would mean that three-fourths of its life was gone on that theory. But that is not what I have done. I have observed that wire, and find that it is practically as good as it was when it was put up there. I think that is what accrued depreciation actually is. The things that shorten the life and cause it to come down are things that do not affect its physical condition at all. I think you should consider that these causes do affect the dollars out

of the Company's pocket, but I think you should also know what condition the property is in from a physical standpoint. The other figure is a thing you should ask for from the accounting people.

What my men have done is this. They have brought back the actual depreciation that exists there. The only other way to get what I think you have in mind is to determine [fol. 387] its salvage and its average life. This is an actuarial and not an engineering matter. It has to be done by somebody who can make a careful analysis of the books to see how old the property is, and they would have to analyze the books to see what the average life is. I have not made those studies.

Redirect examination:

It is my understanding that the accountants figure out, for the purpose of making depreciation allowances, an average life of each kind of property. Assuming that a pole has a life of about 15 years, I examine such a pole and find it to be in 50% condition, after allowing the minimum amount for salvage, and I attribute 50% depreciation to that pole. I assume that the accountant would tell you that that particular pole was 12 years old, then he would figure that 12 years of its useful life had expired.

As to the things which end the service life of poles, apart from decay: The Company had a very bitter experience with storms two years ago. It lost thousands of poles in the western part of Maryland. If a pole is broken off or blown down by a storm, the useful life of that pole is then and there very suddenly ended. A particular pole which I am inspecting is one that has not been blown down by storm to date, but is standing there, whatever its age. I [fol. 388] would say there was more reality in my method than in the accountant's, that is, to consider how much that particular pole was impaired, rather than to consider that the pole had a remaining useful life between its present age and the average service life. I think that is the only possible answer, regardless of any theoretical life or age. The poles that were blown down by storms in the past I could not inspect—they were gone, yet those are the poles that make that 15 year life.

If I found poles standing that had used up a great deal of their anticipated 15 year life, I did not reduce them to

the basis that the accountant would have done. I took the actual poles I found there and calculated the amount of depreciation which those poles had actually sustained. If they had been fortunate enough to survive the storms that had wrecked their brothers, I do not think they ought to be depreciated because they happened to exceed the average span of life. I assumed the accountants, in fixing this 15 year life, assumed that a lot of them were going down by storms. In the case of poles and in aerial wire that is a very important element in determining the life. The poles and wire which I examined were the survivors which had not gone down. I think that is one difference between my method and the accountant's method. I am sure that among the poles that I inspected were some which by the application of the so-called accountant's method, would be considered as dead or of negative value.

It is true that sometimes an additional switchboard may [fol. 389] be added alongside the old one, and then again it may be more economical in the case of growth to take the old one out altogether and install an enlarged one. Both methods are used. I did not make any calculation as to what items I examined might, in the future, from the future growth of the Company, have to be supplanted by larger items. That was not included in my calculations of depreciation.

In reference to obsolescence I referred to creosoted wood conduits. There is a wooden conduit that is good, but the particular kind that we depreciated was due to the fact that it was not modern and was a type that had shown heavy depreciation. To that extent I did take cognizance of obsolescence, and in other cases too.

It is true that poles and wires frequently go out of service because of public changes in roads and relocations that have to be made for that reason. This is something that the accountants take into consideration in estimating the probable lives of wires and poles. Storms and public requirements and all of those facts which may happen in the future are elements in the 15 years the accountants arrive at. In my estimate of existing depreciation I did not take into account the probability that in the future, before the life of a pole is ended, that there may be these public changes that require it to come down, and I have no means of ascertaining what that would be. That is the difficulty

of estimating what may be called the remaining life. It could be arrived at in total. Whether any of these elements [fol. 390] have happened is all that I am concerned with. If the storm has not hit the pole, or if the authorities have not ordered it to be removed, and it is in 50% condition, that is the condition I put it in. The same thing is true if growth has not yet reached the stage where that pole may have to be replaced by a stronger line. If it has 50% area left and that is ample to carry the load, that is the percentage it is put in at.

Referring to the electric generators or convertors that the Company uses in the central offices, I do not think that it is necessary to take these pieces of machinery apart in order to determine the approximate depreciation it has undergone. There are ways of finding that out, by the condition of the commutator, whether the bearings are good, and whether it is a type that is efficient or not.

Recross-examination:

When I spoke of the theoretical life expectancy that the accountants use for determining annual depreciation expense, I meant whoever it is that makes the study for annual depreciation expense. I know that engineers are going to testify to that in this case. I think it is true that the Bell Companies have accepted the theory of straight line annual expense for their annual contribution to the reserve. But the condition of the property is not represented by the [fol. 391] amount in the reserve, nor by the annual expense of depreciation. As I understand the difference, the amount that is set up annually should take care of all forms of retirement, storms, accidents, municipal requirements, inadequacy, and what not, and also wear and tear. Most of those things do not affect the physical condition at all of property that is well maintained and so that the condition of the property if it is well maintained will always be between 85% and 90%, but the amount in the reserve is to take care of all those other things I have mentioned. It is sort of an insurance. In my opinion, the amount of the reserve goes more to the question of retirement than it does to what I call actual depreciation. I know that the annual expense of depreciation, estimated by engineers, takes into account the past storm experience as a guide for the future.

I think that Going Value is a matter of judgment. If you have several beacons or guides that set up the limits, I think that a reasonable person can arrive somewhere between those limits as a reasonable amount for Going Value, and that is what I did. One of the guides that guided me was the amount that the Courts have fixed in terms of percentage. That is one of the things I cut my cloth to, and another is the actual expense of obtaining business.

[fol. 392] Dr. Willford I. King, a witness of lawful age, was produced by and on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, plaintiff, and testified as follows:

Direct examination:

I am 53 years old and live at Flushing, New York. I am Professor of Economics, School of Commerce, New York University. I received the degree of A. B. from the University of Nebraska in 1905, the degree of M. A. from the University of Wisconsin in 1910, and the degree of Ph. D. from the same institution in 1913. I was appointed an assistant in the Department of Economics at the University of Wisconsin in 1910. I began teaching a course in statistics at that institution in 1911. Thereafter, I taught both economics and statistics until I resigned from the University faculty in 1917. At that time I was an Assistant Professor. I resigned to accept a position as Associate Statistician with the United States Public Health Service. During the period 1917 to 1920 I was engaged in studying the economic causes underlying pellagra. During this period I prepared index numbers showing changes in the prices of the goods bought by families employed in the cotton mills of South Carolina.

In 1920, I was appointed economist in the National Bureau of Economic Research. While at the National Bureau I supervised the preparation of five different index series, showing the respective changes in the "costs of living" of five different segments of the population of the United [fol. 393] States. I am a Fellow and have served one term as Vice-President of the American Statistical Association. Since 1924, I have been Secretary-Treasurer of that organ-

ization. Since 1927, I have been in charge of the statistical work in the School of Commerce at New York University. From time to time, I have acted as statistical advisor to the United States Public Health Service, the United States Department of Agriculture, and the United States Bureau of the Census. In 1911, I published "Elements of Statistical Methods"—a textbook in statistics which is still widely used in both America and abroad. It has been translated into Chinese and Japanese. I have also written a number of other books, including a book entitled "Index Numbers Elucidated." This book was published in 1930. In addition to the books mentioned above, I have written many articles for scientific and financial publications. I have read the Opinion of the Public Service Commission in this case and have seen the use which has been made of index numbers and I understand it in a general way.

As to what in a general way is the chief function of an index number: An index number is primarily a device for measuring changes either from price to price or from time to time in some variables and very commonly they are used in connection with economic variables. Index numbers are used for the purpose of measuring changes in prices, changes in the volume of employment, changes in physical volume of production and changes in the rate of turnover of labor. But the commonest use probably is to measure changes in prices of various commodities or groups of commodities. When an index number is used for the purpose of measuring changes in prices, it is an indicator which is [fol. 394] used in an endeavor to approximate the changes in pr relatives applying to the aggregate or totality of the item the group under consideration.

A price relative is merely a ratio between two different prices of the same thing at different dates. Suppose, for example, that the price of corn were 50 cents a bushel on one day and that at a later day the price of corn was found to be 75 cents a bushel. The ratio of the price of the latter date to the price of the first date would be 1½. That is would be 1½ over 1. We usually omit the denominator and refer to it as 1½ times the price of the first date. Very commonly these price relatives are multiplied by 100 to express in terms of percentages. In that case we would say the price at the later date was 150% of the price at the first date. Price relatives can be calculated from the price

on simple things like iron wire or from the total price of complex things like a building. It is merely the ratio of the price at one time to the price at another time. Hence you might have a price relative based on a bushel of wheat or have a price relative based on this entire building. The cost of the building at one date as compared to the cost at another date would be the amount of relative ratio between the two dates.

If records are available to show the original cost of certain buildings it would be possible to determine the reproduction cost as of another date by applying the appropriate price relatives to that particular property. If you had the total value of the building at the first date and the total value at the second date, there exists a ratio between the value at the second date and the value at the first date. The word "value" might be either a market value or a cost value. If you were taking a commodity that was frequently bought and sold, you could express it as a market value. If you took something that was not frequently [fol. 395] bought and sold, you could readily measure the ratio in the cost of reproduction, but not readily measure the ratio in the market value. If you have the cost at the later date and the cost at the first date, you can calculate the ratio between them. If you were to know the ratio and either the cost at the first date or the cost at the later date, you could certainly find the cost at the other date by a process of multiplication or division, as the case might be. That is, there are three quantities here, and if any two of the three are know, the third is merely a matter of arithmetic. Price relatives are not commonly determined and used for complex things like a building, the reason being that in most cases you do not have the complete information at both ends of the line and hence are unable to compute the price relative. You cannot compute a price relative without complete data. In the absence of complete data, it is customary to use the substitutes for prices relatives, or approximations to price relatives, that are known as index numbers.

There is an analogy between an index number and a price relative. They are very similar in their appearance. You may have a set of price relatives which would show the actual changes in the price of a particular commodity at different times, or of a composite such as a building at dif-

ferent times, or you may have index numbers which are obtained from sample data, and are intended to approximate the course of the price relatives which necessarily are obtained from complete data. The difference between a price relative and the index number is that the price relative is based on complete data and the index number is based on [fol. 396] sample data of the same type. In the case of the index number, you must have sample data that is representative of the aggregate represented by the relative, or the index number is not likely to follow the same course as the relatives in its fluctuations. Of course, it might, but it would be a mere coincidence if it did. To secure an index number which portrays or indicates the course of the relative, you must have a sample which is representative of the aggregate of items represented by the relatives.

An index number is an indicator. It is analogous to the case of a wind velocity indicator that they have on the top of Weather Bureau Stations. That would not tell you the velocity of the wind except at that particular point, but it would show the velocity of the wind in the vicinity was similar to that shown at the Weather Station. So they make up weather maps assuming that the velocities at the Weather Stations are velocities in the vicinity. Index numbers are analogous to that. A good index number for a given purpose is based on data which is in reality a miniature of the complete data. That would be the only safe way to obtain an index upon which you could depend. If you were to select other data, perhaps you would find that it would not be representative, and the results would be that your index number would not behave like the relative, and it would deceive you. It is rather obviously true that an index number can reveal no more than would be revealed by the complete data. The thing that you are trying to cover is the course of the complete data. If you have complete information, and if you can compute the required records without too much trouble, there would be no occasion [fol. 397] to use index numbers. They are merely substitutes for the real thing, the relative which you would like to have.

Describing the general nature of the sampling process employed in constructing index numbers: In constructing a satisfactory index number, the usual process is to divide the field covered by the aggregate which you are studying; that is, the field that would be covered by the relative if you

had complete data, into various segments. The data within each of these various segments should be reasonably homogeneous. The reason for the required homogeneity in each of the segments is to have some assurance that the prices of the articles within these segments will presumably vary roughly in the same way. You then collect from each of these segments one or more items which are believed to be representative of all of the items in the segment. For example, if you were taking wheat and wheat products as one of the segments of the larger composite, you might take No. 2 Red Wheat as a typical item representing wheat in general, because experience indicates that all groups of wheat tend to fluctuate in much the same way as the No. 2 Red. Having selected from each of these segments a representative item or items, you would then proceed to build up your index number by weighting these respective collective items by weights representing the importance of the group represented in the aggregate. You would not weight the items by their importance in the sample, but you would weight them by the importance of the segment which they represented in the aggregate. In that way you would expect that the index number would fluctuate in the same way as the relatives and are fairly representative. It is essential that the elements entering into the index number be representa- [fol. 398] tive of the elements in the totality or aggregate represented, and that they be weighted in proportion to the relative amount in these groups, or else the chances of your obtaining an index number that represents fluctuations in the totality would be slight. If you happen on to such an index number, it would be sheer chance.

Q. (By Mr. Milne:) Now, Dr. King, in the Commission's order on page 31, and also during the cross-examination of Mr. Gretz, it was stated that the only accurate indices of price changes would be indexes made up currently and contemporaneously as actual experience indicates in that particular year. It was also stated that there is a risk of an enormous amount of error if one has to go back to previous years to work out index numbers. Do you agree with this statement?

A. The answer to that question depends entirely upon the nature and adequacy of the data which are available. If you have adequate data, dependable data, there is no disadvantage in computing an index number from past data.

For example, the Bureau of Labor Statistics in January, 1932, built up its index number of 784 commodities, running back to 1926. Previously to that time they had had an index number of 550 commodities, but they desired to enlarge the number of commodities in the index number and they built this new series, taking it back to 1926, by taking [fol. 399] quotations secured from various sources for the period running back to 1926. I do not happen to know how they got these quotations, or how exact they were. However, if the quotations were accurate and the data adequate, it would be advantageous rather than disadvantageous to use past data in building up an index number. There are two reasons for that. The first one is of minor importance. It is that if the same person supervises the preparation of the entire index number, there is less likelihood of misunderstandings creeping in as to the method of computation, and less likelihood that the quotations will not cover exactly the same items. The more important feature is this, that in building up an index number from past data, if all the quotations are available, you can look over the mass of data on hand and decide which sample items are best suited to your purpose. That is, in some of these sample items you will find that the quotations will only cover part of the years in question. In other cases, you will have quotations running through from the start to the finish. You save much difficulty if you select the items where quotations are available throughout. You avoid the necessity of chaining the index number. For that reason it is decidedly advantageous to construct the index number from past data, provided that you know that the past data are adequate and reliable. If you do not know that fact, it would be better to construct the index number from current data.

[fol. 400] (The witness continued:)

There are some index numbers which may be described as ready-made or readily available which are used for the purpose of showing the trend of specified kinds of prices. Very many such index numbers are computed both by governmental and private organizations. Each of these index numbers purport to show the trend of prices in some particular field. One index number that has been commonly referred to is the index number of prices of commodities

at wholesale, put out by the United States Bureau of Labor Statistics. That purports to cover the prices of commodities at wholesale. There are other index numbers also purporting to cover the same thing: For example, the Annalist Weekly Index, published by the Annalist Magazine at New York; we have also Dun's Index, which has been published for many years in Dun's Review; and Bradstreet's Index, published in Bradstreet's Review. Although all of these index numbers nominally cover the same field, that is, commodities sold at wholesale, they do not all move in parallel lines, at a given time, and they do not show the same result. According to the last number of the Survey of Current Business, February 1934 issue, which I have here, the Bureau of Labor Statistics combined index for the 784 commodities in December, 1932, which was near the bottom of the depression, reads 62.6 with 1926 as the base of 100; Bradstreet's Index, also on the same base, 1926 equal to 100, reads 52.6; Dun's Index on the same base reads 69. Now, those all nominally covered the same field but they give different results because they have been constructed along different lines.

[fol. 401] Referring to statements which have been made about the Bureau of Labor Statistics Index of 784 commodities at wholesale, as being an all-commodities index or general commodities index: That is not a correct expression of the index. It is not an all-commodities index and the Bureau of Labor Statistics has never contended that it was. It is intended to represent the fluctuations in the field of commodities sold at wholesale. There are other groups of commodities that are equally important, for example, the aggregate value of commodities sold at retail would be greater than the aggregate value of commodities sold at wholesale. The commodities sold at wholesale, though having a smaller aggregate value than the commodities sold at retail, may be sold more times and hence in a published total you may find the commodities sold at wholesale being given a higher rating than the commodities sold at retail, because the same commodity has been sold several times at wholesale and only once at retail. But from the aggregate physical quantity of commodities, those sold at retail would be larger in physical quantity than those sold at wholesale. The Bureau of Labor Statistics of wholesale price index is a composite index in itself. It is made up of

784 commodities and these commodities are classified into 10 groups. An index number is made up for each of these 10 groups and the 10 groups are then combined.

As to the question concerning the official nature of this index number, and whether it is the official price index of the United States I might say, that it is an official index number of the Bureau of Labor Statistics. They also have [fol. 402] several other official index numbers in the Bureau of Labor Statistics. One of them is the Cost of Living Index which shows the prices of commodities sold to working-class families in the United States. They have another official index which has been published for many years, covering the retail prices of food in the United States.

In answer to the Court's question, as to what percentage of 1926 prices is represented by 1932 prices for selected commodities sold at retail as distinct from wholesale, meaning the change in the price level of the commodities sold at retail, I have the statistics here. In the National Industrial Conference Board Index, which usually parallels rather closely the Bureau of Labor Statistics Index, the quotations for all groups on the base 1923, which would not be very different from the base 1926, is 75.1 for December, 1932. This is in regard to the general cost of living, including clothing, food and light, housing and sundries. It takes in the entire list of things supposed to be bought by the average working man's family.

From what I have said it can be concluded that there is a decline from 1926 to 1932 in terms of wholesale commodities, represented by 100 to 62.6 while the cost of living for the same years declined from 100 to 75. The bases are not exactly identical, but it would be roughly correct. The wholesale prices tend, as a rule, to fluctuate more widely than do retail prices. Hence movements are much larger in the case of the wholesale prices.

The cost of living index is itself a composite of other indexes. It is made up of the other different group of items already mentioned and, in addition, each group is a com- [fol. 403] posite made up by adding together the index numbers computed for representative cities in the United States. An index number is taken for each city separately and they are all put together to make up a total for the United States as a whole. The Bureau of Agricultural Economics of the Federal Government issues index numbers, one of farm

prices which is likewise a composite index, comprising seven groups, and another, comprising all goods bought by farmers, so they can compare those goods with the prices of goods sold by farmers.

I do not know of any index which it would be proper to characterize as the official price index of the United States. No one is more official than the others. Any one of these index numbers published by a particular Department of the Government is official for the particular purpose which it covers.

As to the comparative bases of the index numbers in the field of wholesale commodities, there is a wide difference in the number of articles in the different index numbers. Bradstreet's contains 96 articles, Dun's contains 300, and the Bureau of Labor Statistics, 784. That has some significance, but not as much significance as the other features such as the method of weighting and of selecting the sample items. In the United States Bureau of Labor Statistics Index, an attempt is made to weight each of the articles according to the importance in the total consumption of the nation of the respective groups represented by the items; that is, meat items taken together would be weighted in proportion to the total consumption of meat in the United States; sugar would be weighted in proportion to the total consumption [fol. 404] of sugar, and steel items would be weighted in respect to the total consumption of steel products.

Illustrating this: You can imagine the total goods sold at wholesale in a given year being put into an enormous basket, and you can ascertain the value of all of this great total in the base year, which happens to be 1926. If you kept exactly the same commodities in the basket year after year, and found the total value of that basketful of commodities at another date, the relationship between those total values would be the same as the relationship between the index numbers computed by the Bureau of Labor Statistics. The computation of Bradstreet's Index is notably different. They also take the total value of a basketful of commodities at the various dates. The basket contains exactly the same commodities at each date, but in place of putting the quantities into the basket that represent the total consumption of those goods in the United States, Bradstreet's put one pound of each commodity into the basket, that is, the basket would contain 96 pounds of commodities. The natural result is that because prices tend to fluctuate by percentages,

rather than by absolute amounts, the high-priced commodities, the ones that have higher prices per pound, dominate Bradstreet's Index. I understand that originally in Bradstreet's index silver was included, and as the price of a pound of silver was more than the price of all of the other commodities going into the index, the result was they found that the index was virtually an index of the price of silver. Silver was naturally dropped out, but the result is still that it is an index of the high-priced commodities. It happens, [fol. 405] I don't know why, that these high-priced commodities fluctuate more widely than do commodities in general.

As to Dun's Index I cannot describe with the same degree of precision, because they do not publish as adequate a description of the components going into it. There are 300 commodities and apparently the index is weighted more heavily with food than is the Bureau of Labor Statistics or Bradstreet's. Dun's Index, therefore, does not fluctuate so widely as does Bradstreet's Index. It is more like the Bureau of Labor Statistics in its fluctuations.

The influence given to any one commodity is regulated or weighted in proportion to ratio that the total of that commodity bears to the total of all the commodities. That is true in the case of the Bureau of Labor Statistics Index, and is stated to be true in the case of Dun's Index. In the case of Dun's Index, the data not being described so fully, I am not able to state the effect of the thing as fully as I can in the Bureau of Labor Statistics Index, which I have investigated more thoroughly.

There are very many other index numbers issued for specific purposes. In addition to the ones that have been mentioned as put out by the Government, there are also such index numbers as Fairchild's Index of changes in the prices of commodities sold by department stores; the Cost-of-Living Index of the National Industrial Conference Board, an index of changes in the prices of goods purchased by the working class, which is put out because they can get the data monthly, and the Bureau of Labor Statistics has been pub- [fol. 406] lishing their Cost-of-Living Index only once in six months. There are also the index numbers purporting to show changes in the cost of construction of different types, for example, the Aberthaw Index showing the change in construction of a particular type of building; the Engineering Record Index, showing changes in a broad way in certain im-

portant materials, and labor costs that go into buildings. Those are typical of the private index numbers compiled for special purposes. There are also many index numbers covering the price fluctuations of stock, or the price fluctuations of bonds. Those are only samples of a very large number of different kinds of indices.

These published index numbers are intended in most cases simply to show general or average trends. As a matter of fact, every index series is appropriate merely for answering one particular question. Many people may use them to answer other questions but it is a complete misuse because the other questions have different answers from the questions which the index number is designed to answer, and if the index number is used to answer those other questions, it is likely to give incorrect results and sometimes absurd results. I think that to call those published indexes ready-made indexes, would be a reasonable term to apply to them. They are made and published weekly, or monthly, or daily, as the case may be, for the purpose of giving a general indication to many people of the price changes going on in the particular field which they are supposed to cover. Being published for a large audience of readers, they obviously cannot be fitted to the particular needs of each reader. They can only give information which they think will interest many readers.

[fol. 407] As to whether any ready-made index could be used for the purpose of translating specific aggregate of expenditures as of one date to the cost levels of another date: You could use it, but you would have no reason to suppose that you would get the correct result by so using it. The items entering into the index were not put into it with that purpose in mind. If you want to answer a specific question with a fair degree of precision, you must make the index number with a view to answering that particular question. You must put in it the appropriate items, and you must weigh them by the appropriate weights. If you do that, and if your sample is well chosen, the probabilities are your index number will answer the question you have in mind. On the other hand, if you have another selection of items, and another set of weights, if it answers the question correctly, it is a matter of chance and not a matter of logic. It is my conclusion that what has been called ready-made index num-

bers, could not be employed for the purpose of determining from the original cost of the Telephone Company's property, the reproduction cost as of the present date. It would be a most unscientific way of attempting to accomplish a definite purpose if one used such index numbers to that end, because they are not constructed for that particular property. Answering the Court's question as to whether my conclusion regards telephone property as peculiar property or would the answer be the same as to any other specialized property: My conclusion would be applicable to any other type of property as much as it is to telephone property. There is no difference in that respect.

[fol. 408] Each different group of prices in the price structure fluctuates in quite a different fashion from the course of prices in general. If you attempt to take any generalized index to measure the changes in any specific group of prices, you are likely to go sadly astray. If you were to take a generalized index of a broad nature to measure some generalized group of prices, you might come much closer to the truth, but the different groups of prices do not behave in the same way, and that is the difficulty of taking a general index to measure the particular group. The Telephone Company's property is merely one specific group of prices and might have a number of other groups that might also fluctuate differently. Even if, by some chance, the general index numbers did include some of the items entering into the property under consideration, the mere fact that they included such items would not make the index number appropriate for measuring changes in costs of that property, unless the items were weighted approximately in the same proportion that they were used in the construction of the property. That is, it is a question both of the nature of the items entering into the index and also the question of the weighting applied to those items.

Answering the Court's question as to what, in my opinion, the Bureau of Labor Statistics index of commodity prices at wholesale is good for: My theory is that its chief practical value is to give the general public a gauge as to the fluctuation in the prices of commodities at wholesale, in general, so they can see how the commodities in which they are interested are moving, as compared to the general average of that type of prices. Also movements in the wholesale price [fol. 409] index are taken, correctly I believe, as being one of

the gauges of influences affecting business activity. People generally believe that when prices are rising, business is likely to improve, and when prices are falling, that business is likely to grow worse. That is not always true, but there is enough correlation for people to believe that is true. Hence, they watch fluctuation in this index number in which they are interested. In order to detect movements more sharply, we have such index numbers as the Annalist, a sensitive price index which moves very rapidly, and Moody's Spot Commodity Index moves very rapidly.

As to whether it is correct to say that the index indicates the difference in the purchasing power of the dollar: It would indicate changes in the purchasing power of the dollar only with respect to the particular type of commodity considered. That is, it does show changes in the purchasing power of the dollar for commodities sold at wholesale. The term "purchasing power of the dollar" is merely the inverse of the term "index number." That is, if you compute the reciprocal of index number, you have the purchasing power of the dollar. If you know the group of items to which the index number applies, you also know the group of items to which the purchasing power of the dollar applies. This particular index applies to commodities sold at wholesale and would reflect changes in the purchasing power of the dollar for such commodities. The purchasing power of the dollar varies with every particular commodity to which it is applied, and to every particular group of commodities to which it is applied, just the same as the prices of these particular commodities vary in their movements.

[fol. 410] Answering the Court's question, the Bureau of Labor Statistics Index for the 784 commodities in December, 1932, was 62.6, and in December, 1933 was 70.8.

All costs do not fluctuate in the same manner and degree. They differ very widely in their fluctuations. Individual prices of particular commodities have remarkably different trends, and even groups of prices have decidedly different trends. Referring to the reciprocals of index numbers of the Bureau of Labor Statistics, they are entitled the "purchasing power of the dollar", and the Bureau of Labor Statistics calls them "reciprocals". In December, 1932, wholesale prices, that is the reciprocal of their commodity index—were 160.8, retail food prices stood at 151.7; farm prices at 265.3, cost of living 135.5. That represents the

differences in the purchasing power of the dollar. That is the period December, 1933, on the base that the average 1923 to 1925 equals 100. These are the reciprocals of the price index numbers. They are entitled the "purchasing power of the dollar". But that shows the wide divergence between the fluctuations in the prices of the different groups of commodities. That means that if a dollar from 1923 to 1925 purchased 100 cents worth of merchandise of the kinds mentioned, the same dollars in 1932 would have purchased the amounts mentioned. In farm prices it would have purchased approximately 2⅔ times as much in physical volume. In the articles used by the labor classes, on the average it would have purchased about 1⅓ times the physical volume. Whereas in the general basketful of com-
[fol. 411] modities, it would have purchased about 1 3/5 as much, and in retail food it would have purchased 1½ times as much. Even when contained in sizeable groups the fluctuations are decidedly different, but not as different as taking the individual commodities or small group commodities.

Illustrating the fluctuations from some of the ten groups which are composited into the wholesale commodity index of the Bureau of Labor Statistics: With the index numbers for 1926 as 100, there are such divergencies as the following as of December 1933: farm products were 55.5; petroleum products stood at 51.6; silk and rayon 29.6. These were the ones that were extremely low in price but it shows the range. At the other extreme we have those that declined but slightly: Cement stood at 91.2, boots and shoes 98.6, metals and metal products 83.5. I do not have the December, 1933 figure for electricity, but in December, 1932 it was 104.1. There are wide variations between the different groups, and also between the commodities going to make up those respective groups. The individual commodities vary widely and even when grouped together, there are wide variations in the small groups. A chart which was prepared for me, illustrates the fluctuations in the different sub-groups entering into the "miscellaneous" group in the Bureau of Labor Statistics wholesale price index.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-37".)

This chart, Exhibit A-37, and the index numbers which accompany it, shows the wide differences in the items and

groups of items entering into this group entitled "miscella- [fol. 412] neous", one sub-class of the Bureau of Labor Statistics Index numbers. These relatives being all on the base of 1926, the index numbers all pinched together at 1926, that is they all passed through 100. If you select any data as a common base for a number of index numbers or a number of relatives, you force them to come together at that one point. But as soon as you depart from that particular date, it is almost invariably true that each of the index numbers proceeds to pursue a different course from each of the other index numbers. This particular chart shows that between 1926 and 1928, cattle feed moved up from 100 to 138. In the same two-year period, 1926 to 1928, crude rubber moved down from 100 to 46; then cattle feed and crude rubber both proceeded to fall, and by 1932 crude rubber was down to 7, cattle feed down to 46, radically different changes. Crude rubber in this case was falling rapidly, but if we turn back to an earlier period, between 1921 and 1925, we find that crude rubber rose from 34 up to 150. Answering the Court's question whether the movement of prices in crude rubber was directly affected by the external influence of British trading, it was undoubtedly affected very sharply by that, and it is correct to say that the action of the British in taking off the embargo restrictions when they found they could not effectively control prices in relation to supply and demand, caused the drop in prices because the market became flooded with rubber.

During that same period, 1921 to 1925, when crude rubber was running up at such a prodigious rate, auto tires and tubes were running down, so that auto tires and tubes fell from 179 in 1921 to 99 in 1925. That was due to the expan- [fol. 413] sion in consumption and improvements in methods of making them.

As to the Court's comment that the manufacturers reduced their prices on account of a very large output, I think that touches one of the fundamental things in regard to all of these prices. As Professor Warren has very well put it, every price is dependent upon four things: the supply of and the demand for the particular commodity; the supply of and the demand for money. The money factor tends to affect in a common way the prices of all the commodities dealt in but the particular factors affecting the supply of and demand for each particular commodity or specific

groups of commodities have their own influence, regardless of the changes in the general supply of money. Just as was pointed out in connection with rubber and automobile tires, there are specific influences at work which determine the courses of the price movements, and while their movements are slightly influenced by changes in the supply of money, the specific influences were so much more important, that any monetary influences were entirely negligible during that period. It is because each of these items are affected by their own specific influences that there are such wide divergencies between the cost trends of the several different items.

As to whether the price movements may also vary because of the degree of fabrication in the particular article, there is no doubt but that there is a difference between raw materials and partially manufactured commodities and the highly manufactured articles, in the extent to which their prices tend to fluctuate. In general, raw materials fluctuate [fol. 414] more widely in price than do the semi-manufactured articles, and semi-manufactured articles fluctuate more widely in price than do highly manufactured articles. Referring again to the quotations in the Survey of Current Business, the Bureau of Labor Statistics Wholesale Index for finished products, on the base of 1926 equals 100, stood at 68.4 in December, 1932, while at the same date the index number representing raw materials stood at 52.1. The semi-manufactured group in December, 1932, stood at 57.7, or about half way between the index numbers for finished products and the raw materials, which is what you might expect. Going to the later date, December, 1933, the finished products index stood at 74.8, the semi-manufacturers at 72.3, and the raw materials at 61.9, the divergence being less now than at the bottom of the depression, but there is still divergence, though the divergence between finished products and semi-manufactures has diminished materially.

The "All Miscellaneous" line, the heavy black line on Exhibit A-37, is merely an average of each of the other lines. The Bureau of Labor Statistics has a group, one of the ten groups, which they call "miscellaneous" and in this miscellaneous group they have not only these specific index numbers for cattle feed, paper and pulp, auto tires and tubes and crude rubber, but also another minor index which they call "Other Miscellaneous." As to whether this chart

is prepared for the express purpose of showing the wide variation in particular items, or to show any line which represents the general trend: The only line on the chart [fol. 415] which represents a general trend is that showing the general trend of all of these particular commodities in this "Miscellaneous" group. The heavy black line, "All Miscellaneous" line, does not represent what has been described as the "All Commodities" index but is merely one of the ten groups used in the composition of the so-called "All Commodities" index, and the classification appearing on this chart is the classification used by the Bureau of Labor Statistics. The particular group, Group 10, includes 51 items out of the total of 784, and these items have no characteristics in common. The other groups in the Bureau of Labor Statistics index are farm products, food, hides and leather products, textile products, fuel and light materials, metals and metal products, building materials, chemicals and drugs, house furnishing goods. There were left over a number of odds and ends which did not seem to fit in to any one of the other nine groups, and these were put in this "Miscellaneous" category to form Group 10.

It is a matter of common knowledge that the general trend of prices from 1929 or at the beginning of 1930, at least, through 1932, was downward. Since December, 1932, there has been first a sharp rise in most commodities, and then a flattening out, and the general level at the present time of the majority of the commodities is well above what it was in December, 1932. The general downward trend began in 1928 for the average of all commodities, but did not become at all abrupt until the latter part of 1929. The line labeled "All Miscellaneous" in the chart Exhibit [illegible]-37, is pretty gradual and fairly regular from 1926 on, but that [fol. 416] is not characteristic of the courses of commodities on the whole. Since the end of 1933 there has been a tendency of prices to rise again, not so rapidly as they did in the middle of the summer of 1933, but rising slightly.

An index number based on raw materials used in the manufacture of apparatus and equipment going into the finished product, such as a telephone company's property, could not be used for the purpose of determining the present or current cost of that property, because that would represent only one factor in the current cost. Property consists of not only raw materials, but things purchased

in the manufactured or semi-manufactured form. Also, there is another item which is extremely important, and that is labor. You could not use an index number showing changes in the cost of reproduction of a plant of a type like the telephone property, unless you had in that index number various sub-indices representing the prices of the different kinds of labor that was utilized. These sub-indices would also have to be representative of the labor going into the construction of the plant. Obviously, the weighting would have to represent the proper proportion of common labor and the proper proportion of skilled labor and of each different type of skilled labor, if there were marked differences in the price levels of the different kinds of skilled labor. Different kinds of commodities, and different kinds of service, would have a different price fluctuation, as we have just indicated by the example taken from the Survey of Current Business. It cannot be assumed that different [fol. 417] commodities and different services will fluctuate together, unless you know that they are influenced by common causes. The only common cause that will influence all of them is changes in the supply of money and money substitutes, but each has its own different influence which tends to cause fluctuations different from commodities in general.

The published index numbers which I have been discussing cannot be used for a specific purpose, unless that specific purpose happens to be the purpose for which they were prepared.

Answering the question that if each of a group of index numbers is in and of itself inappropriate for a specific purpose, whether anything would be gained by averaging those index numbers in a group or taking the average of the results obtained through the use of such index numbers: I can see no reason that you would get any better results by averaging a number of inappropriate index numbers than you would by taking one of these and using it. When those various index numbers are averaged, the result is a composite which is more or less of a hodgepodge; each index number is weighted differently from every other index number, that is, the components going into the index number are weighted differently from the components going into any other index number. One can tell rather definitely what question a specific index number answers, if he knows how that index number is made up, but when a

number of index numbers are put together, unless they are made up similarly, it becomes practically impossible to tell what question the composite index answers. To answer a particular problem by means of index numbers, one needs to have index numbers that apply to the particular problem, not to some other things. Illustrating this: [fol. 418] Suppose it was desired to measure the average velocity of flow in the Ohio River. One way to do that, of course, would be to take an average of the rate of flow in the Missouri River and the Alabama River and the Red River and the Hudson River and all the other rivers around the country, average the results of these flows and state how rapidly the Ohio River runs, but it would be an extremely crude way of doing it. A much better way would be to put gauges in the Ohio River and see how it runs, and if that were possible it would be the more logical method. If there were no possible way of using that method one might say we will get some idea of how rivers run generally by trying all these others and seeing how fast they run but the result would have no specific relation to the flow of the Ohio River.

As to the Court's question whether the margin of error would be reduced if we took a composite trend, rather than any single one: That might or might not be true. It would depend entirely on whether the Ohio River resembled in its rate of flow the average of all the rivers. If it were a typical river, undoubtedly the composite would be closer to the flow of the Ohio River than one of the others, but if the Ohio River happens to flow much more slowly than the other rivers, the composite might not be anything at all like the Ohio River. So with a group of commodities; if the group of commodities happens to be typical of all commodities, then the average of a large number of different index numbers would tend to approximate the course of this particular group of commodities. But if this par- [fol. 419] ticular group of commodities happens to behave differently from commodities in general, one would get no closer to it by averaging the index number in a thousand groups of commodities, because the average of a thousand other groups of commodities would be approaching a normal of all commodities, whereas this might be abnormal.

If different kinds of index numbers are included, there might be no resemblance to the particular index number

for the commodity group in which one is especially interested. The only reason there could be any resemblance would be due to the fact that was mentioned before that all commodities are influenced by the changes in supply of money and credit. That is the only reason why prices would tend to fluctuate together, and there would be nothing gained by averaging a number of index numbers, unless this particular group happened to be typical of what the trend is in general.

Cross-examination:

This chart, Exhibit A-37, was prepared by some of the employees of the A. T. & T. I received the chart this morning and I verified it by reading back the figures from 1926 on. They were correct. I have not read back the figures before 1926, because I didn't have them. The first time I saw this chart was this morning. I had nothing to do with the selection of the various commodities that went into the chart.

As to whether I do or do not know what the legal criterion [fol. 420] of the fair value of a public utility is: I have only a very hazy idea. I am not an expert in that line. As to whether a general purchasing power index would or would not be a fair criterion of the fair value of public utilities, that is outside of my field.

As to whether any index which would be suitable for stabilizing the dollar would be a general commodity index: There is a great difference of opinion as to the type of index which would be best for use in stabilizing the purchasing power of the dollar. Some would choose an index representing the average of all the prices of all commodities bought and sold. That would be the general purchasing power index. Others would prefer to stabilize the purchasing power of the dollar on the basis of consumers' goods only, the things that people actually consume, because they believe that the greatest justice would be obtained by having the prices of the things bought at retail by the average person remain stable year after year. Others feel that they prefer to stabilize the purchasing power of the dollar on the basis of the wholesale price index, such as the United States Bureau of Labor Statistics wholesale index, their theory being that they would thereby stabilize the course of business, and if they stabilized the course of

business, all of the prices of other things would take care of themselves. As to just which of those theories is correct, I am not sure. As to whether the difference on this point would depend on the particular interests of the particular class: I doubt that there would be much difference [fol. 421] on that account because the ordinary consumer is also a producer. The laboring man is just as much interested in full employment as in the stable prices of his goods. So I think that is hardly the line of demarcation.

Answering the question whatever actual index is chosen for the purpose of stabilizing the dollar, whether it must necessarily represent a cross-section of the purchasing power of the dollar: such an index would represent a cross-section of the particular purchasing power of the dollar, which you feel it is desirable to stabilize. To my mind it would be true that that particular purchasing power of the dollar would mean something general, rather than a specific commodity, although the majority of the people of the United States, in the last 130 or 140 years, have preferred to stabilize the purchasing power of the dollar in the terms of one commodity only, gold, and until very recently it was stabilized in that way. As to whether Dr. Warren and myself are not far apart in the desirability of stabilizing the dollar: I think Dr. Warren and I would agree very well on that in terms of a broader group than gold.

At the session of the American Statistical Association in December, 1927, I delivered a paper entitled "The Best Index for Use in Stabilizing the Price Level".

(Thereupon counsel for the Commission read to the witness an excerpt from the paper referred to, as follows:)

"My own opinion is that this particular problem is one of but minor significance. Almost any reasonable price-[fol. 422] index would answer very well for the purpose. Had the dollar been stabilized in 1913 on the basis of Dun's, Bradstreet's, The Annalist's, or the United States Bureau of Labor Statistics' Index of wholesale prices, the results would have been reasonably satisfactory, and most of the evils resulting from price changes would have been eliminated. * * * On the basis of 1913, none of them are far enough apart at the present time to make the results differ materially."

I would still adhere to the statement I made then. The reason that I hold to that point of view which some other economists, who have the same desires as myself, do not agree with, is that it is my feeling that if you stabilize one set of prices, broad in nature, that you tend thereby to stabilize other prices as well. I am of the opinion that if you were to stabilize the prices of goods purchased by the consumer, that you would thereby stabilize also the prices of commodities bought at wholesale. In Sweden recently they have attempted to stabilize the value of their money on the basis of value of goods purchased by consumers, and the evidence thus far gathered, it is true only over a brief period, seems to indicate that stabilization on that basis also tends to stabilize the average of prices at wholesale, not the individual prices, of course, the reason being [fol. 423] that the prices on commodities at wholesale are, after all, merely reflections of the expected prices of those commodities when later they merge in form of consumers' goods. Other economists take the point of view that if you stabilize the average of prices of commodities sold at wholesale, that since these commodities later enter into consumers' goods, it would have a tremendous stabilizing force on index numbers of prices of consumers' goods, because consumers' goods are affected by the cost in manufacturing those goods. Merchants mark up their prices by customary percentages and, hence, it is believed that stabilizing prices of commodities wholesale would also stabilize the prices of commodities at retail. I am inclined to think there is some basis for that contention. Further there are some economists that feel that the general price level ought to be stabilized in terms of labor.

For the purpose of stabilization of the dollar to secure a satisfactory result I would feel that you should have a broad index. Personally, I think it would be entirely satisfactory to stabilize the purchasing power of the dollar upon the basis of a general index of the prices of consumers' goods.

As to whether the so-called "All-Commodities" Index would be a satisfactory basis: Personally, I am inclined to believe that it would not be as satisfactory as a general index of the prices of consumers' goods, the reason being that I do not know whether stabilization of the All-Commodities Index would tend also to stabilize the prices of

goods bought by consumers. If it would, it would accomplish the same end which I would have in mind, but if it did [fol. 424] not, we would have the result that stabilization of the prices of commodities at wholesale would introduce fluctuations into the prices of the commodities at retail, which I would think undesirable. I do not know that would be the case. It is merely a possibility.

As to whether when I mentioned an index of "goods bought by consumers" I referred to the cost of living index: The Cost of Living Index put out by the Bureau of Labor Statistics covers the type of goods bought by working classes, but omits the type of goods bought by families having larger incomes. As to whether the All-Commodities Index would be more representative than the cost of living index: As a matter of fact, the divergence in the past between the Bureau of Labor Statistics Wholesale Index, and the Cost of Living Index, has been very considerable. When I was at the National Bureau of Economic Research, I prepared five different index series, each one being intended to represent the prices of goods bought by specified classes of consumers. One represented the prices of goods bought by farmers; one represented the prices of goods bought by agricultural laborers, one the prices of goods bought by families having an income of around $5,000 per annum, and one representing the type of goods bought by families having incomes around $25,000 per annum. These 5 different index numbers, including the Bureau of Labor Statistics Cost of Living Index, which I used for the urban working classes, all tended to differ but slightly as compared with the difference between any one of those 5 consumers' goods index numbers and the [fol. 425] wholesale price index of the United States Bureau of Labor Statistics.

As to which class of these five income groups mentioned, would include the average telephone user: I do not know the numerical answer, but it would be safe to say that the percentage of the so-called laboring class having telephones would be smaller than the percentage of the more affluent sections of the population.

As to whether the All-Commodities Index is used as a barometer in several of the important operations of the United States Government such as the Federal Reserve open market operations, I do not know to what extent the

Federal Reserve open market operations are governed by that index, but I would assume that they would use it as a barometer of business conditions. That would seem one of the gauges which would influence them decisively.

With reference to the efforts of both President Hoover and President Roosevelt to raise prices, and the method used of measuring whether prices were up or down generally: I think the customary method used at Washington has been to use the Bureau of Labor Statistics index of 784 commodities at wholesale, as a general gauge as to whether the prices were rising or falling.

As to whether I cast any doubt on the accuracy of that Index because it does not contain all of the commodities that are bought and sold in the United States: It seems to me that the Bureau of Labor Statistics Commodity Index is an excellent representation of the fluctuations in prices of commodities at wholesale. I know of some people who disagree with that statement, but I am inclined to think it is very good for the purpose for which it is constructed. It corresponds to the average general purchasing power in terms of commodities bought at wholesale. But most econ- [fol. 426] omists would agree that it is by no means the adequnte measure of the purchasing power of the dollar in terms of commodities bought by the consumers. The index is better than any other index for measuring the purchasing power of the dollar for the particular types of commodities in which you are interested if you wanted to measure the purchasing power of the dollar in terms of the commodities index of the Bureau of Labor. If you wanted to measure the purchasing power of the dollar in terms of foreign products, it would be a poor index to use.

If I wanted to find an index which would represent a cross-section of the purchasing power of the average consumer in the United States, I am inclined to think that the choice in such a case would lie between two different index numbers. One would be the Cost of Living Index put out by the Bureau of Labor Statistics, and the other would be Carl Snyder's index put out by the Federal Reserve Bank of New York City. These both move in a general way along parallel lines. I am inclined to believe that the index which we prepared at the National Bureau of Economic Research, made up of the composite indexes of cost of living which I mentioned, came considerably closer, than either of these

others, to measuring the general purchasing power of all consumers, and the divergence between the several groups is not great enough to be marked.

The purchasing power of the dollar was low in 1920 as compared with 1932. In other words, the dollar in 1932 would buy more than in 1920. In the vast majority of cases prices were lower in 1932 than they were in 1920, though there are exceptions to the rule. In the great majority of cases prices are also lower in 1932 than in 1929. As to how, [fol. 427] when I determine in my own mind that prices are lower in 1932 than they were in 1929, I go about discovering that fact: There would be many ways of discovering that. If I wanted to find the change in prices of any particular commodities, I would examine those particular commodities. If I wanted to find the change in aggregates of groups of commodities, I would examine index numbers representing those particular aggregates of groups of commodities in which I was especially interested. I do not know what percentage of prices are lower in 1932 than 1929, but a great majority of prices were lower. The majority of types of labor had also fallen in price between 1929 and 1932, but I believe it is not as universal as in the case of commodities. There is a general agreement among economists that labor follows changes in the price of other commodities but lags slightly both going up and coming down; this is true especially of common labor and labor employed in such lines as manufacturing.

As to whether I would want to express an opinion that a public utility property such as The Chesapeake and Potomac Telephone Company of Baltimore City, is worth more or less in 1932 than it was in 1933:—My opinion would be that there would be only one way I could judge anything about that point, and that would be to study the value of the stock and bonds of that company and see whether they were selling for a larger aggregate or sum of money at the latter date than they were at the former; because telephone plants are not customarily bought and sold in a market like we buy pig iron. We do not have market quotations on telephone plants and I would not have any guide except the things I get quotations on. Telephone plants are being bought and sold in small units of shares of stock, and if I could get quotations there I could judge how the public valued the shares. As to whether the earnings of

any security would determine to a large extent what its [fol. 428] value was on the market: The value of any security is determined largely by the anticipated earnings applicable to that security and also by the state of the public mind in regard to securities in general, whether the people are optimistic or pessimistic. As to whether, if a public utility value was up as against the common trend and it was a specialized property, I would expect to see its securities stay up in the same way as its value: I am so doubtful about what the value of the public utility is, that I fear I would not be competent to answer that question. The only gauge of the value that I could put my finger on, which would seem to have much tangible significance, would be the value of its securities on the market. As to whether, if I knew that the common stock of the A. T. & T. in 1929 was 310 and went to 84 in 1932, and is now 118, that would indicate to me anything about the value owned by the A. T. & T.: It would indicate something about the value that the public put upon the prospective earnings of the Company, but would tell nothing about the cost of reproducing this property, because that would not be the question at issue. The public make their guesses as to how much a stock will earn in the future, and they are also influenced by the amount of cash they have available to buy stocks, and that sets the valuation on the stock market.

I would see no particular contradiction in terms in the costs of reproducing this utility being higher now than they were in 1929, but the securities of the owner of that company being lower now than in 1929, because the prices of the securities are related but very indirectly to any ques- [fol. 429] tion of cost of reproduction of the plant. In the case of most manufacturing corporations, for example, the physical plant has not changed noticeably during the last three or four years, and yet we have seen prices of the stocks of these corporations go down in many cases to one-tenth of what they were worth at the peak, and then recover three or four times, showing there is surprisingly little relationship between the physical condition of the property and the value of the securities in the minds of the public. Taking the price of public utility stocks on the New York Exchange, there is also found extremely violent fluctuations although their physical plant has failed little. In many cases the physical plant is better now than it was three or

four years ago, yet the stock may be selling for a small fraction of what it was worth then. The change in the value of money since that time is only a minor factor in determining this, and the decline in the price of stock for example, from $150 a share to $10 or $15 a share can be ascribed only in small part to the change in the supply of money and credit in the United States.

It would strike me as incongruous that though this depression started in 1929, the reproduction costs of this Company should be higher than they were in 1929, unless there were given some good reason for this increase. I know something about the reason put forth by the Company witnesses so far, but I am not particularly well posted on that. In most cases it is not the common experience of business that they are able to raise their prices when there is a falling off of demand. As to whether one of the commonest reasons for [fol. 430] raising prices in a period of low demand is the fact that such prices are monopoly prices: That would be the usual inference. In answer to the question, if I knew that the A. T. & T. owns the Plaintiff Company and also owns the Western Electric, from whom the Plaintiff Company buys almost all of its products, and if I knew also that the demand since 1929 for telephone equipment has fallen off, and that prices during that time had risen instead of falling, whether I would regard that as monopoly price: It would seem to me to be an evidence of monopoly price, but I understand that the only reason for regulating the public utilities is that they are universally recognized as natural monopolies, and, therefore, subject to regulation. You would not therefore expect the same rules to apply to a monopoly that you would to competitive goods.

As to whether I would include monopoly prices in preparing an index within any group to determine what is a fair price: I am extremely skeptical about the doctrine of fair price. I never heard anyone who could find what a fair price really is, in a way that seemed to me to be particularly clear. If I were making up an index number of prices in general, to find out whether the goods sold at those prices, I would not inquire particularly as to whether the articles were sold by monopolies or under competitive conditions. But in determining a fair price in a case of regulated concern, I understand—although I am not an expert

in that line at all—that the question is to keep the rate of return down to a reasonable amount of the investment, and hence regulation is necessary. As to what I mean by "investment", here again I am going outside my field, but there [fol. 431] are various theories of a fair return; one is upon the value of the property used as measured by reproduction; another is upon the original prudent investment. I am not prepared to endorse either one of these theories of rate regulations. I am sure that my own theory would be somewhat different from either one of these.

As to whether a set of reproduction costs, which were higher in 1932 than in 1929, and which witnesses have indicated are more or less stable over a period of time, would tend towards the prudent investment idea: That would seem to be related to it in some way. I understand that the Western Electric prices were lowered much beyond the general trend of prices in 1929, because of the large volume of output, and hence they could afford to sell their goods at a lower price; that later when their volume of output was curtailed, they raised their price in order to prevent undue losses, that is, I understand they sacrificed a part of the profits that they might have secured if they had put their prices at the competitive rate in 1929; and then they recouped themselves to a certain extent against losses by keeping up the prices.

With reference to prices generally, as to whether maladjustment of prices is the most serious thing facing the country at the moment: My opinion is that maladjustment of prices is only a minor evil, as compared to the fact that the price level as a whole has declined very sharply.

If utility rates are based on a conception of fair value found by reproduction costs, and these costs are higher [fol. 432] now than they were in 1929, and if the relative prices of the thing sold by the public utilities were higher than the prices of other commodities, then the purchasing power of the consumer in terms of those things sold by the public utilities would be lower. One would be the inverse of the other. It would depend upon the relative changes in the two rates; the rate charged for the services of the public utilities and rate charged for other things.

In answer to the question if the rates of this Company had not gone down since 1923, although the ability of the average individual to purchase had gone down materially,

whether it would be true that the individual would be paying more for utility rates now than in 1923: on the basis of the statement that would be true. I am inclined to think that it is a correct statement.

As to whether I know of any general index which has followed the same course as the Western Electric prices, and is higher in 1932 than in 1929, and relating the question to Plaintiff's Exhibit A-20, entitled Western Electric Company, Estimated effect of Price Changes, 1921 through 1933, of New Apparatus and Equipment sold to Bell Companies: I do not know of any general index which is higher in 1932 than in 1929. Observing the figures in Exhibit A-20, I would also call attention to the fact that between 1921 and 1932, the figures shown there are in a general way parallel in the net percentage of change, to what you would find in most of the other index numbers such as the All-Commodities Index. The Western Electric had gone down to a low level and had come up since, so that the net result at the present time is not very different from the course of the other leading index numbers, including the All-Commodities Index.

[fol. 433] I would agree by and large that the Federal Government uses the All-Commodities Index as a barometer for the purpose of determining whether or not some of their major efforts at recovery have been successful.

With reference to the Court's question whether there is from the standpoint of the economist, any incongruity in the reproduction theory which seems to indicate that although the business is a monopoly, its property has to be valued on a competitive basis: My own feeling would be that it would be more logical to value the property of the monopoly on the basis of a prudent investment, provided the changes in the price levels were allowed for. I understand that that theory has never been adopted, because of the fact that people have been loath to admit that the price level has changed, and that reproduction cost theory has therefore been evolved as a rough way of taking account of these changes in price levels. My personal view is that we should adhere to the prudent investment theory, modified with reference to the changes in price levels.

To determine the change in price levels in my theory, it would be necessary to find out what the dollar would buy

in terms of the investment at different times, so that the dollars of one year could be added to the dollars of another year; that is to say, $1000 invested in 1913, $1000 in 1920, $1000 in 1921, and $1000 in 1932, or $4000 invested all together, gives a total which is much like a total of apples and pears and potatoes and somewhat difficult to utilize.

In answer to the Court's question as to what I would do [fol. 434] to express the 1913 costs of this industry in terms of 1933, there would be several different theories involved there according to what you desire to accomplish. If it is desired to give an equivalent return to the stockholders, it would be necessary to find what the dollars would buy for the stockholders at the different years in terms of the things that they would be apt to want to buy. If, on the other hand, it was felt that the dollars should represent amount of plant each year, then the dollars should be converted into equivalent amounts of plants, so you would be having the same physical amount of plant.

Those are somewhat conflicting theories, but not very different. In the application of this theory it would be desirable to have the rate base brought up to date. In order to translate the 1913 rate base into the 1933 base it would be necessary to have an index. As to what index should be used, I don't believe I could answer on the spur of the moment. I have not thought about it sufficiently to give an answer that I might not want to change later. The All-Commodities Index which the Court states was applied by this Court in 1923, did not contain as many commodities at that time, but the general principle of the construction was practically the same. There has been no marked change in the significance of the index since that time.

As to why I say an index figure should be used to modify what might be called the prudent investment: The only reason would be that the investment of a dollar at one time is not equivalent to the investment of a dollar at [fol. 435] another time. If, for example, wages are high and the average man can earn four dollars a day, he can make an investment more readily than if wages are low and he earns two dollars a day. So, when profits are high it is easier for a business man to invest.

As to the Court's question whether that consideration last mentioned applies theoretically more to what is a fair rate of return than to an ascertainment of what is the fair value of the property on which the return is to be made: I should think that that is a correct assumption. As to whether it could not be adjusted more readily through the rate of return than by an attempt to translate dollars by index numbers back over 50 years to dollars of each one of those years: I would suppose that in estimating a fair rate of return, if the price level had been fluctuating violently, you would legitimately have to take into consideration the amount that was invested in each particular year to give justice to all of the people, but it is a rather complicated process to give justice to investors who invest at different price levels.

Answering the Court's question as to whether, in the case of a utility built up over a period of 50 years, being valued say as of December 31, 1933, it is more logical and proper to ascertain the value of the property at one point, to-wit, 1924, and then translate the 1924 value to 1933, or to carry it out by taking the amount of plant constructed in each year and translating that by the proper index number to 1933: It seems to me that if the process [fol. 436] were carried out either way the result would be the same. If you started with the year 1913 and carried that up to 1923, your values at that time if translated on the basis of the cost index, would be in terms of dollars of 1923. Any construction added in terms of 1923 dollars, being the same type of construction dollars, could be added together legitimately and the results would be the same. The translator should be applied to each particular year.

Nearly all of the index numbers indicate a slowly rising price level from 1897 to 1914. We have data for wholesale prices to compare the price level of 1894 with that of 1934, but not very reliable data for other types of prices. For wholesale prices we have the Bureau of Statistics Index running from 1890.

As to whether assuming a fixed amount of income from the years 1929 to 1932, the same income in 1932 would purchase more, it would depend on the particular things, but in the case of most commodities such as materials in

the All-Commodity Index, it would buy more in 1932 than in 1929. If a utility were receiving the same income in 1929 as it did in 1932, it would be actualy getting a very substantially greater amount of purchasing power than it did in 1929, if it purchased the majority of commodities on the open market. As to whether that would apply to any commodities that one would want to purchase with any money they had: That is rather a broad order. I would not want to make quite as sweeping a statement as that. Making it personal to me, if I had any choice I would decidedly prefer to have a salary of $50,000 in 1932 than the same salary in 1929.

[fol. 437] August P. Gompf, a witness of lawful age, was produced by and on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, plaintiff, and testified as follows:

Direct examination:

I reside at 30 Glendale Avenue, Alexandria, Virginia. I am Staff Engineer of the Chesapeake and Potomac group of Telephone Companies. I graduated from the Baltimore Polytechnic Institute in 1910 and from Columbia University with the degree of Bachelor of Science in the year 1916. Immediately following my graduation, I taught industrial arts and industrial mathematics for one year at the State Normal College, Bowling Green, Ohio. In 1917, I assumed a position at the Panama Canal in charge af apprentice training and continued there until I went into the army air service. In the air service, my work was principally with the radio telephone and its use as a means of communication between aeroplane and ground stations. At the conclusion of the war, I again resumed my duties at the Panama Canal, where I continued until 1920. In 1920 I was employed by the General Engineering Department of the Chesapeake and Potomac Telephone Group operating in Maryland, the District of Columbia, Virginia and West Virginia. My first position was an Engineering Assistant [fol. 438] engaged in depreciation and cost study work. This work I continued until the year 1927, when I was made Inventory and Cost Engineer of The Chesapeake and Potomac Group of Telephone Companies, in charge of inventories, appraisals, and depreciation studies.

I was appointed to the position of Staff Engineer of The Chesapeake and Potomac Telephone Group in 1929, which position I still hold. My duties since my employment with The Chesapeake and Potomac Telephone Companies have required me to become thoroughly familiar with the plant and equipment of said companies, including the plant and equipment of this Company, and with the engineering, construction and maintenance of said plant and equipment; also with the accounting practices with respect to depreciation on this plant and equipment. I have made and am continually making, or am having made under my direct supervision, engineering studies to determine the proper annual rates of depreciation for the property of this Company. These rates of depreciation are furnished to the General Auditor of the Company from time to time, and are used by him to compute the annual expense of depreciation.

Expense of depreciation is an expense of operation which occurs because the items of property that are devoted to giving the service must be retired sooner or later from one cause or another. The cause may be physical deterioration resulting from wear and tear, the action of the elements; it may be inadequacy, it may be obsolescence, it may be the result of public requirement, it may be the result of casual- [fol. 439] ties such as storms or fires, or it may be a combination of several of those factors. But regardless of what the cause is, it is a fact that the cost of the property is used up in rendering the service and that cost is an expense of operation that is attributable to the period during which it was giving service, and each year must bear its share of that cost. For example, if the cost of a pole is $20, if it is in service for ten years, if there is no salvage at the end of that service life; the expense each year would be $2, the annual depreciation rate would be 10%; if the salvage was $4, the total loss would then be $16, and the annual depreciation expense would be $1.60 or the annual rate of depreciation expense would be 8%.

The factors that determine the amount of annual depreciation expense are the cost, the service life and the net salvage realized at the end of that service life. By service life, as we use it in our consideration of depreciation expense, we mean the life in one location. There are some kinds of property, such as the telephone itself, which may

go through several service life cycles before its physical life is entirely used up. We are dealing here and set up these rates of annual depreciation expense on the basis of the service life in one location, and, of course, we credit our salvage on the basis of the salvage realized after that life in each location. I mention that because that is a point that must be taken into consideration when we come to these classes of station equipment. Now the net salvage that I speak [fol. 440] of, of course, is simply the gross salvage less whatever it costs to remove the plant or recover the salvage.

The cost is known, the service life and salvage are not as definitely known of course, but they can be estimated with a reasonable degree of accuracy. The size and complexity of the property and the different characteristics of the different classes of the property make it necessary to deal with these factors of service life and salvage by classes of property rather than for the property as a whole; also because of the great number of units within one of these classes of property and the varying service life that those individual units may have, it is necessary to deal with average service life for all of the units within a class of property, rather than attempt to set up depreciation rates for each individual unit.

The same is true with respect to the salvage factor. We deal with average salvage for the class of property. What we have in effect then is a study of average annual depreciation rates, one for each of these several different classes of property. In the property of this Company here in Maryland there are 26 separate classes and sub-classes of plant equipment for which I have determined average service lives and average net salvage, and the resulting annual depreciation rate. This use of average service life and average salvage in determining the depreciation rate is in accordance with the specifications of the Interstate Commerce Commission for the treatment of depreciation accounting.

[fol. 441] The estimate of service life and salvage are based fundamentally on the experience in the past with respect to those two factors. That experience, of course, must be interpreted in the light of the conditions that have applied in the past and must be translated to apply to the present or future plant, in the light of present or expected future conditions as far as they can reasonably be foreseen.

I have made exhaustive studies of the past experience with respect to service life and salvage for all of these different classes of property and have also gone into an analysis of conditions under which those service lives and salvage percentages were realized in the past, and then considered those in the light of such information as is available to me regarding present conditions or expected future conditions. For example, I found from my studies of past experience in this Company that the average service life of poles ranged generally between 16 and 18 years. Most of this experience had been with untreated poles, whereas in the past few years the Company had installed practically nothing but treated poles. Those treated poles are impregnated with a creosote treatment which enables the poles to withstand decay and therefore they would have a longer physical life than the untreated poles that have been used in the past. This is cited as an example of the considerations that must be given and to indicate that I do not rely entirely on past experience. It is necessary to consider the effect of changes in conditions that should produce different results in the future. That is one case where such change was considered.

[fol. 442] Another thing that has a very important bearing at the present time is the changes in general business and the effect that they have had on the Company's business and growth. Growth ordinarily causes many existing facilities to become inadequate and thereby brings about their retirement and the substitution of facilities of greater capacity. In normal times, such growth is one of the most important factors in causing retirement of telephone property. That was true in this Company up to 1932. Early in 1932 the Company began to lose telephones. These losses continued throughout the year and in the fall of 1932 a careful review, which we made, indicated that this force of inadequacy had temporarly lost some of its force and that it would be a less important factor in causing retirement for the present plant. As a result of that review, we revised our depreciation rates downward on January 1, 1933. At the time that revision was made, our expectations as to what would happen in 1933 were a little more optimistic than they should have been, and they were not borne out by the experiences in the early part of 1933; the heavy station loss continued during the early months. So a second

review was made, and as a result the rates were further reduced effective April 1, 1933, that is, the service lives of certain classes of property, it was apparent, were going to be longer than we had previously estimated and longer service life would naturally result in a lower depreciation rate.

There are certain classes of the property on which these unsettled business conditions have the opposite effect. In [fol. 443] the case of the station equipment, such as the telephones, or station apparatus, the booths that serve as public telephone stations, and the small private branch exchanges—the unsettled business conditions have the effect of shortening the service life. That is, subscribers give up their service or change their service more often in times of unstable business conditions than in normal times. In these cases we have a shorter service life to deal with and as the result, a somewhat higher depreciation rate. Station Apparatus, Account 231, is one of the classes of station equipment, and is affected by the consideration I have just mentioned. In answer to the Court's question with respect to Account 231, Station Apparatus, for which the Company claims a rate of 7% and the Commission allows 5%, whether anything has actually happened in 1933 tending to confirm or refute our estimate that the depreciation rate properly chargeable on that item is 7% rather than 5%, our experience has supported the higher rate and as a matter of fact, it even supports a higher rate than we have estimated, as an average over a period of years during which this station apparatus would be in service.

In fixing service life, the same method of study is not used for all classes of property. Different methods are used for analyzing this past experience as to service life, because the characteristics of different classes of property differ considerably, and the kinds of records that are available differ for different classes of property. It is necessary [fol. 444] to suit our method to the kind of records, and the kind of information that is available as to the history of service life experience. We use three general methods, first, the detailed forecast method; second, mortality study method; and third, the turnover method.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit A-38.")

Referring to the method known as the detailed forecast method: That is used in the case of the buildings and central office equipment. For those two classes of property the records show for each individual building and for each central office the complete history of the investment in that building or office. The records show the date and amount of the initial structure or installation, and the amount of equipment expressed in terms of dollars of investment added or retired during each year since the initial installation was made; so that there can be determined from that information a picture of the history of the office in terms of the money invested in it up to the present time. In this connection it must be borne in mind that the service life of central office equipment is not the period of time which has elapsed since the date of the initial installation up to the present time, but because a large part of the equipment in that office has been added in later years, it is necessary to weight each part of that equipment by the number of years that it has been in service, in order to obtain a weighted [fol. 445] service life for the building or equipment up to the present time. The first page of Exhibit A-38 is one of the detailed studies applying to the Baltimore Gilmor Central Office Equipment. In 1903 the office was started with an initial investment of $23,838, and there have been additions made in various years since that time as indicated on the left-hand side of the sheet, and, also, retirements have been made in certain years, and at the end of 1932 there was an amount of $417,276 still in service. In computing the average life from these figures, we consider that each of these additions or retirements shown in the various years, dates from the middle of the year in which it is shown. The amount in service at the end of the year, therefore, is the average amount for the year, dating from the middle of that year to the middle of the next year. Each of those amounts would have a weight of one year of service life, and adding up all of those amounts, we will have a total dollar years of service during the whole period. The total of 5,493,942, shown on the left-hand side, are the dollar-years up to the middle of 1933. To obtain the total dollar-years to December 31, 1932, an adjustment is necessary and results in a total of 5,285,304 as the total dollar-years to December 31, 1932. These total dollar-years of 5,285,304 are divided by $518,063, the total amount invested in the

office up to that time (shown in the second column) in order to obtain the average realized life to the end of 1932, which is shown as 10.2 years.

It is also necessary to forecast the future of that office in terms of additions and retirements up to the time that the office would reach its capacity, when it could not be en- [fol. 446] larged any further and would have to be replaced by a new and larger equipment. Those future additions and retirements are of two classes: one representing what we term minor or routine additions, which are items that come along with more or less regularity, regardless of whether there is any growth going on or not, and the other classes, representing additions necessary for expected growth. In order to include the minor additions, I made a study of what they have averaged in the past as a percentage of the total investment in the office, and have included these minor items for each year in the future at the average percentage amount. Additions are necessary because expected growth requires more switchboard sections and more subscriber's line equipment. There are two such additions indicated in this study, one occurring in 1938 and the other in 1942. The forecasts as to when and how much those additions would amount to, are based on long-term commercial and engineering estimates of the line and station growth in the particular central office area. Such forecasts, of course, are affected by this loss in growth which has occurred during the last two years, and these additions, if normal growth had continued, would have been expected earlier than indicated here. Likewise, the final retirement date, that is, the date at which the final or ultimate capacity of this office would be reached is now estimated at a later date than we had expected under normal growth conditions prevailing prior to 1932. This forecast indicates that that particular office will have reached its capacity by 1945, and at that time will have to be replaced by a new and larger [fol. 447] equipment to take care of future growth beyond that point.[5] In our prior studies, before we felt the loss in stations resulting from the business depression, that retirement date was estimated somewhat earlier. The average service life estimated for the office as a whole up to the final retirement date is simply a continuation of the "dollar-year" computation that I explained in connection with the average realized life up to the end of 1932. The study

indicates that the average service life for the entire span of life of this office would be 17.62 years.

We made a similar detailed forecast study for each manual central office and for each manual central office building. The second page of this Exhibit A-38 shows the study made for the building which houses the Gilmor central office, set up in the same form and based on the same sort of historical records as the study for the central office equipment. Buildings do not physically wear out, they become inadequate. The detailed forecast method of determining service is used in the case of the manual central office equipment and the buildings housing manual equipment, which two classes of property represent about 22% of the total depreciable property.

The mortality study method is used to analyze the service life experience for certain classes of property, such as pole lines, aerial and underground cables, motor vehicles and non-multiple private branch exchanges. For such classes of property, the records maintained by the plant engineer [fol. 448] show the location, the kind and size, and the date of placing of the individual units of property. When any unit is retired, it is possible to determine from those records its date of placing. And from those records, a summary can be prepared showing the amount of plant placed in a particular year, and the portions of that plant retired in each subsequent year. We have, then, the same kind of basic data that life insurance companies use in analyzing experience of the mortality of human life, that is, we have data as to the amount in service at the beginning of each year of age, and the amount retired during that year of age. From this data mortality rates for each year of age of a given class of plant can be determined just the same as life insurance companies' actuaries determine the mortality rate at various ages for groups of human beings.

Page 3 of Exhibit A-38 shows a summary of such historical data for the class of plant, Exchange Aerial Cable. This data is based on the experience in representative areas throughout the Company's territory, and does not represent the entire exchange aerial cable plant. For most of these mortality studies, the data is taken from representative areas, and in this case, the data represents about 50% of the total exchange aerial cable.

On the left-hand side, in the first column, are shown the calendar years of placing; in the second column, headed "(a)," the amounts of cable placed in each of those cal- [fol. 449] endar years; in the third column, headed "(b)," are the total amounts retired up to the end of 1931, out of the amount placed in any particular calendar year, and in the next column, headed "(c)," the total amount remaining at the end of 1931 out of the amounts placed in any particular year.

Following the table across to the right, there next appears a series of columns numbered "0," "1," "2," "3," "4," etc., which are age columns. The upper figure in each of the rectangles indicates that amount of plant placed in a particular year which survived to the beginning of each succeeding year, and the lower figure on the rectangles indicates the amount placed in a particular year which is retired at each of those ages. By relating the lower figure to the upper figure, a mortality rate could be determined for each year of age of the cable. This could be done for each calendar year's complement of the cable placed, as far out as the table runs. If this was done, however, we would find that we had this condition, that the mortality rate for age 1 would be based on the conditions that prevailed back in 1903, whereas the mortality rate for age 29 would be based on conditions that prevailed in 1931, and as there may have been considerable change in conditions during that period, the mortality rates for the different ages would not reflect the effect of the same conditions operating. So, in order to get mortality rates for the various ages of the plant that reflect what is happening to the plant, where it is all subject to the same conditions, we use this table in a different [fol. 450] manner. We consider the data that appear along the zigzag diagonal line at the bottom of the table, and if we analyze that we will find that each one of those blocks, being the data for the last year of experience available for any plant placed in all these previous years, is data pertaining to the year 1931. In other words, the plant which has reached an age of one year, is plant placed in 1930. For plant placed in 1910, the last age indicated on here is 21. All of the data along that diagonal line pertains to what is happening in 1931, and mortality rates can be developed by relating the retirements for plant at age 1 that was in service during the year 1931, to the amount that had survived to age 1, and so on for each year of age. In prac-

tice, we usually combine three of these diagonal years of experience. For example, taking the experience of 1929, 1930 and 1931, we add together all of the plant in service that had reached the age 1 during those three years, and relate to that total of plant in service at age 1 the total amount retired at age 1 during the same years. This is done for each of the other ages and a series of mortality rates is developed. From those mortality rates there is computed a life table by starting with some convenient total number of units, such as 100,000. Applying the mortality rate for the first year of age to determine how many of these 100,000 units would be retired during the first year, and deducting that from the 100,000, we know how many survived to the beginning of the second year of age. To that number we apply the mortality rate for age 2 and determine how many would be retired during that second year, and so on until we have used all of the available mortality [fol. 451] rates. It is simple then to determine the average service life that would be realized from a plant for which we have these mortality rates. We know how many units last one year and how many last two years, and these are weighted together, very much the same as I did with the dollar-years of central office equipment, to determine the average service life.

There is shown on page 4 of Exhibit A-38 the graphical picture of four life tables derived from the analyses of four bands of mortality experience data taken from the page 3 summary. However, it frequently is the case that we do not have sufficient experience to complete the life table, and carry out the retirement of the plant to the end. There may be some units of plant remaining after we have applied all of the motality rates that are available from our experience, which indicates that there are still some units of plant in service that will expire some date in the future, there not having been a long enough elapsed period to run them all out. In the case of these curves indicated on page 4, a little less than 20% of the plant remains after all of the mortality rates have been applied. The application of the mortality rates is indicated by the irregular line on the graph. In order to complete the life table, we project the actual curve by means of a mathematical formula, which not only projects the uncompleted portion of the curve, but also smooths out the irregular curve of the actual experience. Before we can compute the average service life, it is neces-

sary to build this life curve out to a point where all of the units would have been retired.

[fol. 452] There are certain other items included in the Exchange Aerial Cable Account, such as the cable terminals, which are the boxes where connection is made between the wires that lead into the subscriber's house and the cable itself, and other items, such as steel strand wire and miscellaneous items, none of which are included in the mortality data, because individual records are not kept on those other items. So it is necessary to adjust the indicated service life based on the experience for the cable alone, to take into account the possible shorter or longer service life as a result of including the items not represented in the data. That adjustment is made after comparing the retirement ratio for the entire class of plant, including all items, with the retirement ratio indicated for the cable alone. If the retirement ratio for the entire class is higher, that indicates that the items not represented have a shorter life than those included, or if the retirement ratio for the entire account is lower, that indicates that the items not included would have a longer life. An adjustment in the indicated service life of cable is made on the basis of the relation of these two ratios, and this adjustment is reflected in our results before they can be used as a basis for an estimate of service life.

The classes of plant for which the mortality study method is used include exchange pole lines, toll pole lines, exchange aerial cable, exchange main and subsidiary underground [fol. 453] cable, private branch exchanges and motor vehicles, which comprise about 39% of the total depreciable property of the Company.

The third method which I mentioned was the "Turnover Method". Turnover studies are applied in analyzing the service life experience for station apparatus, booths, and special fittings, submarine cable, exchange and toll aerial wire, office furniture and fixtures and general tools and implements. These classes of plant comprise about 15% of the total depreciable property of the Company. For these several classes of plant, the records do not provide information as to the date of placing and retirement of each individual unit, as was the case with the classes of plant for which the motality study method was used. The records show the total amount of each of these classes of plant

placed in a particular year, the total amount retired in each year and the total amount in service at the end of each year. After certain adjustments are made to eliminate the effect of differences in costs levels so that the units of property will be weighted or represented by the same cost weighting throughout the period, the data available can be used to determine the average service life by what is called the turnover method. Illustrating the turnover method by a simple analogy, suppose that a shoe merchant had $10,000 worth of shoes on his shelves at the beginning of the year and that he maintained that level of stock throughout the year; also that his total sales for the year amounted to [fol. 454] $40,000. He has turned over his stock 4 times during the year and the average period of turnover is 3 months. We apply the same principle in making these turnover studies and determine the average period in which a given amount of plant in service at a previous date turns over or is retired from the property accounts.

On page 5, Exhibit A-38, there is an example of the turnover method applied to the Station Apparatus Account. In the upper left hand part of the sheet is shown the accounting data used for the turnover study, that is, the amount of plant in service at the beginning of each year, and the amount retired during each year. In order to determine the turnover period, we start from the end of the period, as indicated here, from the end of 1932, and accumulate the annual amount of retirements backward until the total accumulated is equal to the amount of plant in service at some previous date. Referring to the graph in the lower left hand part of page 5 (Exhibit A-38), there are a series of lines running off from the end of each calendar year. Looking at the line which starts off from the end of 1932, the portion of that line lying within the year 1932 represents the retirements in 1932. Following that line across the 1931 period we accumulate or add on, the retirements in 1931, and so on until that line has accumulated to meet the heavy line representing the amount of plant in service. At that point the turnover period is completed, and as indicated by the arrow, it took 4.2 years to complete that turnover, beginning from the end of 1932. Similar accumula- [fol. 455] tions are made from the end of each prior year and we develop a series of indications as to the average

period required to turn over the plant, and from these a trend of service life can be developed.

An adjustment in the indicated turn-over period is necessary in a growing plant like this, because where the amount in service at the end of the turn-over period is more than was in service at the beginning of the turn-over period, the retirements during that period will include some retirements from the additional plant that has come into the picture since the beginning of the period. Those additional retirements cause the turn-over to be indicated as a shorter period than is really the true turn-over period. It is necessary to adjust for the effect of the growth. Referring to the tabulation in the upper right hand part of page 5 (Exhibit A-38), in the second column are the indicated turn-over periods. In the next column is the adjustment which must be made for growth, which is based on factors calculated for various rates of growth; and in the last column the adjusted turn-over period, after eliminating the effect of growth.

The turn-over period increases up to 1923, 1924 and 1925, and from there there has been a downward trend, which is the gradual at first, and in the last 2 or 3 years has been somewhat sharper. That sharper downward trend of the last few years represents the effect of the unstable business conditions, which cause these telephones to be taken out [fol. 456] of service at shorter intervals than during more stable periods; that is, subscribers are changing their service, giving up their service, and renewing their service more frequently during unstable business times than happens when things are running along normally. Illustrating service life or apparatus in one location: If telephone service is installed and kept for two months and then the subscriber moves out, the service life of that station in that location is two months, but, if the subscriber lives there for seven years and has the same station apparatus, the service life in that location would be seven years. The overall physical life of station apparatus is approximately 15 years, so that during the time of greater movement of stations there are more service life cycles in the 15 years of physical life than there would be during normal times when the stations remain in one location a greater length of time. The object of our studies is to ascertain the service life in one location for the purpose of calculating the annual de-

preciation rate. The giving up of service does not cause a shorter physical life of the apparatus, but causes a shorter service life of the apparatus in a particular location. The change in the location probably does shorten the total life to some extent, due to handling and reinstalling, but I do not know that that is really appreciable enough to affect our consideration.

The three methods that I have explained, namely, forecasts, mortality studies, and turn-over studies, do not cover all of the property. There are certain other classes of prop- [fol. 457] erty, such as right-of-way, dial central office equipment and buildings, the toll cable and the underground conduit, for which the experience to date is not sufficient to furnish a direct indication of service life. These classes represent about 24% of the total depreciable property, but because of their generally long service lives with correspondingly low depreciation rates, they account for only about 15% of the total annual depreciation expense. For these classes I have had to base my conclusions on a consideration of the characteristics of the particular class of property in relation to or in comparison with other classes of property of somewhat similar characteristics, with which we have had more experience, and have better indications of service life. These considerations are discussed in connection with the depreciation rates of these particular classes of plant.

I have made studies relative to the salvage experience of the Company. The accounting records of the Company furnished information for each class of property as to the cost of the plant retired each year, the amount of gross salvage realized, and the cost of removing that plant. From these data, there is obtained the net salvage realized in connection with each year's retirements of property of a particular class. I have used these data, after adjusting to eliminate the effect of differences in cost level, to determine the average net salvage as a percentage of the cost of the plant retired. In most cases I have combined these data into 3 year periods, so as to eliminate the fluctuations which occur when you consider a single year's experience, that is one gets a better picture of the average salvage by tak- [fol. 458] ing a three year period. What I have done is to determine what the salvage would amount to if recovered at the same cost level as prevailed when the plant went into

service, that is, the salvage and the cost of the plant retired are stated on the same cost level. In some cases, for example the case of cable and copper wire, where the salvage in the last few years has been affected very considerably by the low prices of copper and lead, I have supplemented these studies of the salvage actually realized, by a calculation to determine how much salvage would be realized for the entire cable plant now in service, if the salvage were recovered at the same level of metal prices at which the plant went into service.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-39".)

The first page of Exhibit A-39 shows the various classes of depreciable telephone property, the average service life, the net salvage and the annual depreciation rate for each class of property. The schedule of rates for annual depreciation effective April 1, 1933, shown on the first page is the same as that filed in the Commission's proceedings in this case. These depreciation rates are the rates I furnished to Mr. Gretz, General Auditor of the Company, for his use in computing annual depreciation expense, and are the same component rates that have been filed with the Interstate Commerce Commission.

[fol. 459] The first class of property, Right of Way, is subdivided into exchange and toll right of way. Right of way is one of the classes of property for which the experience thus far does not furnish sufficient information for direct determination of the average service life. The conclusions as to service life must, therefore, be based on consideration of this class of property in relation to other classes with which it is associated, and for which there is more definite information as to service life. The right of way account consists principally of the pay and expenses of right of way agents, whose time is devoted to securing permission for the location of pole lines, conduits and so forth on private property or on public highways, and also any consideration that may be paid for such permits or rights. Exchange right of way is that secured for the location of pole lines and conduits used in connection with the service within an exchange, while toll right of way is associated with pole lines and conduits used in furnishing the toll or long distance service between exchanges. Most of

the right of way is associated with the pole lines. In some cases the life of the right of way terminates with the termination of the life of the original poles. In most cases, however, it outlives the original poles and is only retired when the route or the general location of the poles is changed or abandoned, such as route changes in connection with road straightening operations; the change of location of a pole line or a part of a line from one side of the road to the other; or changes from overhead to underground construction.

[fol. 460] It is apparent that the life of the right of way will be at least as long as the average life of the poles, and some rights of way, of course, will live through several cycles of poles. On the whole I believe it is reasonable to expect that the right of way will average approximately twice the average life of the poles. In my study I have estimated 40 years as the average service life for the exchange right of way, as compared to 18 years' average service life for the exchange poles with which it is principally associated. For the toll right of way I have estimated 50 years' average service life, as compared to 22 years' average service life for the toll poles. No salvage is recovered when right of way is retired, and therefore the depreciation rate based on 40 years' average service life and zero net salvage is 2.5% for exchange right of way, and based on 50 years' average service life and zero net salvage is 2% for toll right of way. Weighting the 2.5% for exchange right of way and 2% for toll right of way, we obtain a composite annual rate of 2.3% for the total Right of Way Account, as compared to the 1.5% allowed by the Commission.

Page 2 of Exhibit A-39 is a summary of the results of the forecast studies which I have made for the buildings. These studies were all made in the same manner, as I heretofore described. In column 11, page 2, the average service life for the total manual and miscellaneous buildings is indicated as 26.32 years. Rounding out that figure, I have used [fol. 461] 27 years as my estimate of average service life for that group of buildings. For the dial central office buildings, that is, the buildings which house dial central office equipment, or are of a type that they can be retained for dial central office, I have had to base my estimate on a comparison of the general character of those buildings with

the manual type buildings, taking into consideration factors affecting the overall life and average service life. Dial buildings are designed to provide for growth over a longer period than was the case with the manual buildings. This will give the buildings not only a longer overall life, but the average life, after considering the weighted effect of the subsequent additions will also be longer than the average life for the manual buildings. I have estimated an overall life of 60 years for the dial buildings, as compared to an average of about 40 years indicated by our studies for the manual buildings. The average service life I have estimated at 45 years. The overall life of 60 years has been reduced to 45 years to take account of the shorter life of the later additions which will go into those buildings.

As to salvage on buildings: The amount of salvage that would be realized when those buildings are retired from service will depend on the disposition that can be made of them, and their suitability for other uses. If the building is so located as to not be barred by zoning restrictions from some other commercial use, it may be possible to realize [fol. 462] some salvage on the building itself. That is, a purchaser might consider that the building would have some value to him for other use. In a great many cases the amount realized when these properties are disposed of will be merely the value of the land itself. In case the building is used, or can be used for other purposes, extensive alterations will generally be necessary and that will have the effect of reducing the amount of salvage. These telephone buildings are specially designed for telephone service, and generally are not adapted to other usage. They are generally of much heavier construction than the usual commercial building, because the weights of the equipment in these buildings require much heavier construction. That means that the cost of the building, in terms of the cubic feet of space in the building, is high compared to the usual commercial building. In considering what a building would be worth to someone else for ordinary usage, that extra construction cost is not worth anything to him, so that the salvage as a percentage of the cost will be comparatively low. After considering all of the factors, I have concluded that 15% as an average salvage on the manual type building is a reasonable estimate, and for the dial buildings, considering the longer period that we expect them to be in

service, I have estimated 10%. Based on the average service life of 27 years for the manual buildings, and 15% average net salvage, the annual depreciation rate for the manual group buildings is 3.1%. For dial buildings, based on the 45 years' average service life and 10% net salvage, [fol. 463] the annual depreciation rate is 2%. Those two rates represent a composite rate of 2.8% for total buildings, as compared with a composite of 2% allowed by the Commission.

As to the next class of property, Central Office Equipment, page 3, Exhibit A-39, shows the summary of the forecast studies made for the several central offices. The average service life shown in column 11 for the total manual central office equipment is 17.07 years. Rounding that figure out I have used 17 years on which to base the depreciation rate. For the dial central office equipment, I have based my estimate on a comparison of the dial equipment with the manual equipment, and have taken into consideration the fact that the dial central offices are designed to take care of the growth for a longer period than was the case with the manual central offices, so we would expect a longer overall life of those dial equipments and correspondingly a longer average service life. I have estimated an average service life of 22 years for the dial central office equipment, as compared to 17 years for the manual central office equipment. The estimate of 17 years for the manual central office equipment was based on the individual forecast studies, which take into consideration the long term station and line growth in the various central office areas. The average life realized from the manual central offices that have been retired up to this time has run only about 8 to 9 years. It is true that those offices, which have been retired, were the faster growing, and under conditions such as prevailed prior to 1932, we estimated the average service life for the manual equip- [fol. 464] ment of 12 years, so that in my present estimate of 17 years for the manual equipment, I am reflecting an average extension of 5 years in the average life of that manual equipment, as a result of the lapse in growth which we have experienced during the last couple of years. That is, we have lost stations, and therefore these offices will not reach their capacity as soon as would have been expected under continuing normal growth conditions.

As to salvage on central office equipment: For the manual central office equipment I have considered that generally in two classes. As to the No. 1 type of equipment, which is used throughout Baltimore and in other larger cities in the State, there is little or no opportunity now for reuse of that equipment, because it is being supplanted by dial equipment. Any junk value that attaches to the equipment will be offset by the cost of removing it, so I have estimated zero salvage on that. As to the other types of the manual central office equipment used in the smaller cities, there is still some opportunity to reuse parts of it, and when it comes out of service at one place, we may use some of it elsewhere. That opportunity for reuse will decrease as time goes on. I have estimated an average of 10% net salvage on that part of the manual equipment, after allowing for the cost of removing the equipment. The combination of the 10% net salvage on the reusable equipment and the zero net salvage on the #1 [fol. 465] type results in an average of between 3% and 4% for the total manual central office equipment and I have used the figure of 4%. I do not include any salvage on the dial equipment, based on a consideration of the long life and the nature of that equipment. It is mechanical equipment, with many moving parts, and I think that after the long average service life that we are expecting from it, that any salvage would be merely the junk value of any metal that might be recovered. Our experience is that it costs as much to get the equipment out as we realize from that, so that it amounts to zero salvage on this equipment.

Based on the estimates of 17 years' service life and 4% average salvage, we determine the annual depreciation rate of 5.6% for the manual equipment; and based on the 22 years' average service life and zero salvage, we determine the depreciation rate of 4.5% for the dial equipment, or a composite of 5.3% for the total central office equipment, as compared to the composite of 3% allowed by the Commission.

As to station apparatus, before the Commission Mr. Pagon, testifying for the People's Counsel, estimated the salvage on station apparatus as 65%, which is the same as our estimate, but there was a difference between us in the average service life. Referring to page 4 of Exhibit A-39, there is indicated graphically the results of the studies of the service life and salvage experience on station apparatus. The

[fol. 466] service life experience shows that it has ranged from a high of 6.4 years down to 4.6 years in the latest turnover period. That 4.6 years reflects to some extent the effect of the unstable business conditions that have prevailed during the last couple of years. It also reflects the effect of replacement of the desk stand type of telephone by the hand set type, according to subscribers' desires, which results in a shorter service life for desk stands than if they had remained until retired from normal causes. While some extension of the service life may be expected as business conditions become more stable again, the effect of these hand set replacements will continue for a number of years, and therefore in arriving at my estimate I have taken into consideration only the expectation that as business becomes more stable, the life will be lengthened somewhat. I have estimated 5 years as the average service life for the present equipment, indicated by the little circle drawn on the margin of the curve.

As to the 7 year service life shown in the Commission's opinion, this is longer than any of our experience has ever shown, even in normal times when this apparatus was subjected to more stable conditions than at present. The difference between the Commission and the Company as to the final percentage is apparently due to what is considered a reasonably proper estimate of service life because we are in agreement as to the amount of salvage. However, the salvage is related to a service life in one location. Salvage realized from station apparatus retired at the end of a cycle of service life in one location depends on whether it is re- [fol. 467] used or whether it is junked. If it is reused, the salvage amounts to 90%, the only loss being on account of supply expense and some minor parts which cannot be recovered. If it is junked, the salvage amounts to only about 5%. The average salvage realized from the apparatus retired in any particular year depends on the proportions of that apparatus reused or junked. Looking at the results here for the year 1932, the average salvage was 81%; for 1931, 72%; for 1930, 81%. And it varies in the different years, running back. Salvage has been high in those individual years at the end of the period, because that was salvage realized from station apparatus installed during the previous 6 or 8 years, during which time there was a substantial growth in the number of stations, and substan-

tial amounts of new apparatus were being installed, resulting in a larger proportion of new apparatus being represented in those retirements than would be the case if we were dealing with a non-growing plant, or if we were dealing with the history of a particular group of apparatus right through from the beginning to end, through these several cycles of this service life. In order to get a more accurate picture of the average salvage to be realized over the entire life of the station apparatus, the salvage is considered in terms of what would be realized after the first cycle of service life, what would be realized after a second cycle, and what would be realized after a third cycle. Our studies indicate that the overall life of station apparatus will average about 15 years. And on the basis of an average [fol. 468] service life cycle of 5 years, we would realize 3 such cycles, during the total life of the apparatus. After the first two of those cycles we would get this 90% salvage each time. After the last one, however, we would get 5%. That would make a total of 185% realized over the entire life of the three cycles of service life, or an average per cycle of 63%. I have rounded that to 65% as the estimate of average net salvage.

As to private branch exchanges, which include various types of manually operated switchboards and dial switching equipment used in interconnecting a number of telephones of one subscriber: The multiple type group includes the large installations such as used by large hotels, department stores and other places like that, where there is a large number of telephones to be interconnected; the non-multiple type includes the small installations used where there are fewer telephones to be interconnected.

The multiple type private branch exchanges are similar to small central offices, and I have made service life studies for them similar to those made for the manual central office equipment. I have made these studies of all of the multiple private branch exchanges retired in the Chesapeake and Potomac group of companies during the last ten years, because there are not enough of them in any one company to furnish a fair, reliable average indication. Page 5, Exhibit A-39, shows a summary of those studies, of the average service realized from the multiple private branch exchanges, [fol. 469] and indicates in the next to the last column an average of 8.06 years for the total of those private branch exchanges that have been retired. Many of the present pri-

vate branch exchanges are of the dial type, and that equipment is somewhat more flexible, that is, can be extended to take care of increased requirements of the subscriber to a greater extent than the manual type. I have estimated an average service life of 12 years for the present multiple type private branch exchanges.

Page 6, Exhibit A-39, shows the results of service life studies for the non-multiple type of private branch exchanges, resulting in average service life of 5.1 years, based on the most recent three-year band of experience, that is, the band 1930 to 1932; 5.4 years for the 1929-31 band; 5.6 years for the 1928 to 1930 band; and from 7 to 9 years for earlier bands. The recent experience reflects the effect of the unstable business conditions, as these non-multiple private branch exchanges are similarly affected in that respect as the station apparatus. Subscribers give up the service more frequently or change more frequently in unsettled times than they do during normal times, and I would expect, therefore, as business becomes more stable, that the average service life of this equipment will become longer again, and have estimated an average of 7 years for the present equipment.

As to salvage on the private branch exchange equipment, the accounting records do not separate the salvage between the multiple type and the non-multiple type, so that, in [fol. 470] order to get an indication of the salvage, I had to make a special analysis of those records. That analysis indicated an average of 14.3% for the multiple type equipment for the last 5 years. In view of the longer service life that I am estimating for the present equipment, I have estimated 10% average salvage in connection with that multiple type. The analysis also indicated an average of 40.7% for the non-multiple type, the results for the individual years being indicated on page 6 of exhibit A-39. I have estimated for that an average of 40%.

Based on the average service life of 12 years and an average salvage of 10%, the annual depreciation rate is 7.5% for the multiple equipment. Likewise based on the average service life of 7 years and an average salvage of 40%, the annual depreciation rate is 8.6% for the non-multiple equipment. The composite for the two types is 8.2% as compared to a composite of 6% allowed by the Commission.

As to Booths and Special Fittings, the Commission allowed a composite rate of 5%, which agrees with my

studies. There is also an agreement on the rate of 5.8% for pole lines.

Cable is divided into the sub-classes, the first being Exchange Aerial Cable, that is, cable carried on pole lines and used in furnishing service within an exchange area. It includes, in addition to the cable itself, the steel messenger strand which supports the cable between the poles, the cable [fol. 471] terminals, by means of which the wires leading to the subscriber's premises are connected into the cable. The cable consists of varying numbers of pairs of copper wires encased in a lead sheath. The second sub-class is Exchange Main Underground Cable, which is the main or feeder cable carried in underground conduits and used in furnishing exchange service. The third sub-class is Exchange Subsidiary Cable, which is the underground distributing cable running from points of connection with the main cable to distributing poles or buildings, and includes the cables running to the various floors of large buildings where the connection is then made with the individual pairs of wires leading to the subscribers' telephones. The fourth sub-class is Toll Aerial Cable, which is similar to the Exchange Aerial Cable, except that it is used in furnishing the toll or long distance connections between exchange areas. The fifth class is Toll Underground Cable which is similar to the Exchange Main Underground Cable, except that it is used for connection between exchange areas. There is a sixth sub-class which does not amount to very much in investment, Submarine Cable, which is a lead-covered steel armored cable laid under water and used in connection with both exchange and toll service.

Page 10, Exhibit A-39, shows the results of the studies of service life and salvage experience for exchange aerial cable. It shows that the average service life was about 18.2 years for the latest three-year band of experience, the 1930-1932 band; 17 years for the 1929-1931 band; and 15.7 years [fol. 472] for the 1928-1930 band; and from 12.3 to 18.3 years for earlier bands. The service life of exchange aerial cable is affected principally by growth causing existing cables to become inadequate and leading to their replacement with larger cables, or to their removal and the substitution of underground for aerial construction. It is also affected by extension of underground zones in cities, by fires and by lightning, and by the accummulation of sleeves in the cable sheath, where it has been necessary to make

repairs because of injuries. The loss in stations experienced during 1932 and 1933 will result in the extension of the life of some of this cable. Based on past experience and considering this extension factor, I have estimated 22 years as an average service life for the present exchange aerial cable.

The lower graph on page 10 shows the trend of the net salvage experience, which indicates that the salvage has gotten down to zero or actually a little less than zero, meaning that it costs a little more to remove the cable than we actually get out of it as salvage at the present time. However, as a further check on that, I have calculated the salvage that would be realized for all of the present cable, figuring that salvage at the same metal price level as the average metal price level represented in the plant itself. On that basis, after deducting the cost of removal of the cable, I arrived at a percentage of 8% as net salvage for the exchange aerial cable, and I have used that percentage in determining the depreciation rate for the present cable. [fol. 473] Page 11 (Exhibit A-39) shows the service life experience for the exchange main underground cable, and Page 12 shows the service life experience for the exchange subsidiary underground cable. For the Toll, Aerial and Toll Underground cable, there has not been sufficient experience to date to furnish direct indication of service life, and I have had to base my estimates there on a comparison of the toll cable with the exchange cable, so that there are no charts showing experience for the toll aerial or underground cable. Page 13 (Exhibit A-39) shows the experience for the C. & P. group of companies in connection with submarine cable. I have used the experience of the whole group of Companies because there is so little of that cable in any one company. Aerial Wire is divided into two classes, Exchange Aerial Wire and Toll Aerial Wire, classified according to the use in furnishing exchange or toll service respectively. Drop wires, which are the covered or insulated wires leading from the poles into the subscriber's house, are not included in the aerial wire account, although they were included in the Exchange Aerial Wire Account prior to January 1, 1933. The revised Uniform System of Accounts became effective as of that date, and under that system of accounts, drop wires are now included with interior block wires in another ac-

[fol. 474] count. About 80% of the exchange aerial wire is bare iron wire, the remainder being copper wire. Practically all of the toll aerial wire is copper wire.

Page 14, Exhibit A-39, shows the results of studies of service life and salvage experience with respect to the Exchange Aerial Wire as that account is now constituted, that is, excluding the drop wires. Because of that exclusion of the drop wires, I have not carried the study back as far, because I had to make a special analysis of the earlier experience to obtain only the experience related to the line wire portion of the account, which is the portion now carried in that account. That experience shows service life ranging from 14.1 years to 16.4 years, and I have estimated an average of 16 years for the present exchange aerial wire. As to salvage on the exchange aerial wire, 80% of it is iron wire, which has no salvage value, and the cost of removing the wire amounts to about 20% of the cost of the wire, so that the net salvage figure, is a negative percentage, about minus 20%. On the small part of copper wire that is included, the salvage, based on our calculations, will amount to about 20% net, after allowing for the cost of removing it. Weighting those two together results in an average net salvage of about minus 10% for the total exchange aerial wire. Based on the service life of 16 years and net salvage of minus 10%, the annual depreciation rate is 6.9% for the permanent exchange aerial wire. However, there is an additional loss to be considered in connection [fol. 475] with wire; at the time of storms and in some other cases, such as some road construction operations, it is necessary to temporarily use twisted pair covered wire to restore service pending the permanent rebuilding of the plant, and the loss on that temporary wire is also charged to the depreciation reserve, so it is necessary to make provision for that loss in the annual depreciation rate. I have analyzed the experience with respect to losses on temporary wire in the past and found that it averaged about 2%. I have reduced that to 1.5% in my estimate, because a good deal of the aerial wire on the lines that were more seriously exposed to storm damage have been replaced by cable, and I think that it is reasonable to expect that the loss will average less in the future. That 1.5% added to the normal rate of 6.9% gives us a total of 8.4% as the total depreciation rate for Exchange Aerial Wire.

For Toll Wire, the experience is shown on page 15, Exhibit A-39. I have estimated average service life of 22 years for the present wire, 20% net salvage, and allowed 1.5% per year for loss on temporary wire there, and determined a total of 5.1% as the annual depreciation rate for toll aerial wire. The 8.4% for exchange wire and 5.1% for toll wire result in a composite annual rate of 7% for the total Aerial Wire Account, as compared to 6.5% allowed by the Commission.

Conduit is another class of plant for which the past experience, or the experience to date, has not been sufficient [fol. 476] to furnish a direct indication of service life. Structurally, and also with regard to the factors which cause retirement of conduits, the conduit may be considered in three subdivisions: First, the main conduit runs, which are built principally of vitrified clay tile, usually laid on or surrounded by a protective layer of concrete and having varying number of ducts, each of which is designed to accommodate one cable. The second subdivision are the manholes, constructed of either brick or concrete, and located in the main runs of conduit, generally at intervals of one city block or less, so as to permit the cable to be pulled into the conduit in convenient lengths and to permit the splicing of the main cables, the installation of loading coils, and the splicing of subsidiary cables to the main cables. The third subdivision is the subsidiary or lateral conduit runs, consisting of vitrified clay tile ducts and creosoted wood ducts, or fibre and iron pipe ducts. These conduit runs extend from the manholes to poles and buildings, and are provided for the purpose of permitting connection of the main underground cables to the aerial feeder cables or to the distributing plant.

The physical life of vitrified clay conduit, of which the bulk of the main conduit runs are constructed, is, so far as we know, indefinite. Main conduit runs and manholes are at times abandoned, however, due to changes in street grades, construction of sewers and water mains, or relocation of car tracks, and, to a certain extent, when the location of central offices is changed. The manholes have to [fol. 477] be enlarged, or rebuilt from time to time, to allow for the accommodation of additional ducts of conduit running into the manhole, and also to accommodate additional splices of the cable and additional loading coils that may be

added. The subsidiary conduit is abandoned for all of the reasons that apply to main conduit, and also for some additional reasons, such as the removal or the abandonment of buildings, and changes in the underground cable lay-out with respect to the points of connection with the aerial feeder cables.

Considering all of these factors, I have estimated an average service life of 50 years for Exchange Underground Conduit. For Toll Underground Conduit, which consists only of main line conduit and manholes, with no subsidiary conduit, I have estimated an average service life of 60 years. When the conduit is retired, it is abandoned and no salvage is obtained. Based on 50 years' life and zero salvage, I arrive at a 2% rate for the exchange conduit; and based on 60 years' life and zero salvage, a rate of 1.7% for the toll conduit. There is a very small investment in the toll conduit, so that in the resulting composite, the effect of the 1.7% rate is lost. Because it is overwhelmingly controlled by the main or exchange conduit, the composite comes out to 2%, which compares with the composite of 1.5% allowed by the Commission.

[fol. 478] There is no dispute between the parties as to the depreciation rates for Furniture and Office Equipment, or on Vehicles and Other Work Equipment.

Our studies of service lives, salvage and depreciation rates are carried on continually, and have not been for the purpose of this case. Such work is a part of my regular job. It is my opinion that the rates I have set out in Exhibit A-39, based upon the average service life and salvage as submitted in the exhibits, are fair average service lives, fair average net salvage and fair depreciation rates.

The effect of the change in depreciation rates made April 1, 1933, was to decrease the annual aggregate depreciation expense by about $355,000, as applied to book costs, as compared to 1932 rates. That change was made to take account of the extension in service life resulting from the slowing up in growth, or actual loss in stations, which we have experienced during the last couple of years. It was not a result of the Commission's proceedings but was just a normal revision which we would have had to make in our depreciation rates.

Cross-examination:

The lack of growth in the plant at the present time is an important consideration in fixing the annual depreciation expense for the future. It postpones the time when

[fol. 479] the plant would otherwise become inadequate. I do not undertake to appraise, in percentages, the effect of inadequacy on annual depreciation rates. We have not been able to find any way of segregating one of these causes of retirement from the rest of them. These retirements usually involve a combination of several causes.

I am in general familiar with the testimony of Mr. L. G. Woodford before the Interstate Commerce Commission in Case No. 14700.

(Thereupon counsel for defendant read to the witness extract from the testimony of Mr. L. C. Woodford, from page 632 of the record in I. C. C. Docket No. 14700, March 19, 1928, as follows):

"Before discussing these methods I wish to direct attention to one factor which, more than any other, affects the service life of most of the classes of telephone property, at least in the larger companies. This factor is growth; growth in the use of the telephones, growth in the requirements as to plant facilities resulting therefrom. Growth eventually causes buildings, central office equipment and other classes of the plant to become inadequate, and in most cases is the largest single factor affecting their service lives. It is not the only factor, of course, and its effects cannot be isolated from those due to others, but it is the largest single factor."

[fol. 480] That has been our experience. It is the most important, but to reduce that to a percentage is impracticable. The percentage of effect that inadequacy has of itself is therefore a matter of judgment. As to whether reasonable and equally competent men might differ on the question would depend on whether they have the same information and background available. If, as suggested, ten engineers of the Bell Companies selected at random were asked what effect they would give to inadequacy under present conditions, I would not expect their judgment to

be identical, but reasonably comparable to each other. The question of estimating service lives is not a matter of precision, but we do have fairly definite information on which to base the estimate, so that the element of judgment does not have to cover the entire estimate.

I think that these studies are entirely reliable as to the experience in the past. There is nothing imaginary about them, and they correspond very closely to the facts. I think they are accurate enough to serve as a basis from which to reach a conclusion as to depreciation rates after considering such changes in conditions as may be necessary. I do not think there is any method for determining annual service lives that would be more satisfactory and reliable. We have searched the field to arrive at methods which produce the most reliable results.

[fol. 481] In response to the question if these studies are sufficiently accurate for the purpose of determining annual depreciation expense, whether I can see any reason why the same figures should not form the basis for ascertaining an accrued depreciation at any time: I think that depends on the definition of "accrued depreciation". If by "accrued depreciation" is meant the physical impairment which might exist in the property I do not see that these studies would give any light on that. Depreciation expense is the provision that must be made for the retirement of property from all causes. If the term "accrued depreciation" is intended to mean the accrued reserve provision for retirement of property, the meaning would be the same as in depreciation expense.

These service lives are determined for the purpose of distributing the total loss of the property over the service life and to enable provision to be set up for that loss, so that when it has finally occurred it is fully provided for. By loss I mean the cost of investment which is lost by virtue of the property, bought by that investment, being used up in service. The amount accrued in the depreciation reserve through the use of the annual rates for depreciation expense does not measure the physical impairment of the plant. The annual amount accrued in the depreciation reserve through these rates measures the annual rate at which provision must be made for the loss, so that over the service life the total provision will have been [fol. 482] made. The purpose of the annual depreciation expense is to make provision during the life of the prop-

erty for the loss which would be realized when it is finally retired. Inasmuch as the expense provides for certain elements which do not occur uniformly throughout the life, but do occur suddenly and at one time, naturally the expense allowance I would expect to be more than the amount of physical depreciation which might take place in any year.

As to whether I make a distinction between physical depreciation and value: I had not intended to express any opinion on value. I make a distinction between the annual provision for retirement of the property and what might be the annual physical depreciation taking place. There are other than physical causes involved in retirement. As to whether, in the early years of the life of the property, the rate at which it approaches the period of retirement from physical causes is less than in later years: I do not know.

[fol. 483] LAWRENCE G. WOODFORD, a witness of lawful age, was produced by and on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, plaintiff, and testified as follows:

Direct examination:

My home is in West Orange, New Jersey. I am Plant Extension Engineer in the Department of Operation and Engineering of the American Telephone and Telegraph Company. I have been in the employ of the A. T. & T. 10 years, and in the Bell System 23 years. My experience has been as follows:

From 1911 to 1915: Various positions in the Commercial and Plant Engineering Departments of the Iowa Telephone Company. From 1915 to 1923: Appraisal Engineer and later Engineer of Costs and Practices of the Northwestern Bell Telephone Companies and its successor, the Northwestern Bell Telephone Company, operating in Iowa, Nebraska, Minnesota, and North and South Dakota. From 1923 to 1933: Plant Inventory and Costs Engineer in the Department of Operation and Engineering. In that position I was in charge of work on methods for determining the service life and salvage of the various classes of telephone property. In 1933 I was given charge of plant ex-

tension work, in addition to my former duties. I am now responsible for work on methods of making inventories and appraisals, methods of studying service life and salvage, and methods of making fundamental plans and programs for the economical extension of the plant.

[fol. 484] I am the Mr. Woodford referred to in the cross examination of Mr. Gompf, and testified before the Interstate Commerce Commission in Case No. 14700 relative to depreciation rates, in which case the opinion was rendered in 1931. This case arose out of an amendment to the Interstate Commerce Commission Act of 1920. The first hearings were in 1923 and ran intermittently until 1928. The purpose of the case was to investigate the depreciation rates and practices of the common carriers and telephone companies in this country. The scope of my testimony before the Interstate Commerce Commission was about the same as Mr. Gompf testified to in this case concerning the methods of studying service life and salvage. I did not, in the case before the Interstate Commerce Commission, cover specific depreciation rates, because they had not at that time gotten into that phase of the subject. My testimony was a description in a great deal of detail of the methods of determining average service lives, salvage and annual depreciation rates.

The Interstate Commerce Commission has fixed 13 classes of depreciable property in its revised Uniform System of Accounts for telephone companies. All of those classes of property are set forth in Mr. Gompf's Exhibit A-39. I have heard Mr. Gompf's testimony in this case, and I am generally familiar with the methods he follows. I went over his studies when they were made and the methods that he has used are substantially the same that have been used by other Bell Companies. All of the Bell [fol. 485] Companies follow the practice of straight line accounting as specified in the Uniform System of Accounts.

In Case No. 14700, the I. C. C. considered all of the methods of depreciation accounting that I ever heard of, but there is one method in particular that I think would be of interest. That method is called retirement accounting, which really is not a method of depreciation accounting, but is a method of passing over to the future a substantial part of the depreciation expense. Under the method of retirement accounting, there is no reserve at all, the losses due to retirement of plant, which occur at the time

of the retirement, being charged at that time to current operating expenses. In the depreciation hearing before the Interstate Commerce Commission, the railroads had proposed that method of handling depreciation expense. A number of years ago, before as much was known as now about the principles of depreciation accounting, a somewhat similar method had been used by some State Commissions, who, however, usually provided for a small cushioning reserve, to take care of equalization of retirements occurring in the different years. The method of providing for the charges to expense, in order to equalize charges, was to use a flat percentage of book costs, either by individual classes of plant, or for the property as a whole, the percentage of the book costs being determined after a consideration of the retirement losses that had occurred in the past.

[fol. 486] The Interstate Commerce Commission concluded that this method of accounting was unsound, and rejected it, but I am inclined to believe that it has crept into this case, and has had something to do with the depreciation rates allowed by the Commission. I think it was inadvertent, because the Commission, on page 45 of its Opinion, does say that it approves the straight line depreciation accounting principle. But in discussing the depreciation rates for the different classes of plant, reference is made to the Company's actual experience, as it is termed, in support of the reasonableness of the rates allowed by the Commission. That occurs all the way through in the discussion of the individual classes of plant. As to the question which the Court asked about the percentages that appear in the column headed "Company's Experience", on page 48 of the Opinion: Those percentages do not represent the Company's experience as to depreciation rates. As I see it, the only way that you can find what the Company's experience as to depreciation rates is, or has been, is to make studies like Mr. Gompf has made. These percentages do give the Company's experience as to actual retirement losses that have been incurred, but they are not indicative of depreciation rates. In a growing plant, such as the property of the C. & P. Company has been, you are getting a continual dilution by new plant coming into the picture. That new plant is not going to contribute its full share of retirements for some years to come. In consequence, when the retirement

losses that are being incurred are related to the cost of the property in service at the time those losses are in- [fol. 487] curred, you are getting an understated picture as a general proposition. It is a good deal like the death losses that occurred in the earlier years of the fraternal insurance orders. The fraternal insurance companies went along well, with very low premium rates as long as they could get new members to come into the organization and take insurance; those new members being young, the mortality rates were of course low; but just as soon as they stopped growing in membership, and the average age of the members increased, and those mortality rates began to go up, the death losses increased, and they had to increase their dues. Most of them either had to go out of business, or they had to convert their insurance to a sound basis.

Answering the Court's question and pointing out where some erroneous use has been made of this method: In the table on page 48 of the Commission's Opinion in this case, in the third from the last column headed "Company's Experience", there is shown a composite percentage of retirement experience of 2.34% for the Central Office Equipment Account. That account includes two broad classes of equipment, manual and dial, for which Mr. Gompf set up separate depreciation rates. The first dial office was installed in 1923, and there was at the end of 1932 about $3,500,000 of dial equipment in service. Very little of that had been retired. If this retirement experience had been broken down between manual and dial equipment, there would have been shown: For manual equipment, the Company's experience as to realized depreciation would have [fol. 488] been about 2.6%. For dial equipment it would have been about .7 of 1%. These percentages cover the average experience over the 9 years' period, 1924 to 1932. Now a prcentage of .7 of 1% for dial equipment, if that were taken as indicative of the depreciation rate of dial equipment, would indicate an average life of 133 years; but that does form a part of this percentage of 2.34 which the Commission mentions in justification of the reasonableness of the 3% rate allowed for the total account.

As to buildings, the Commission stepped even further awa- from the Company's experience as to retirement losses, which is shown on page 48 of the Opinion as 0.74%. The Commission allowed 2% for a depreciation rate. For

the Central Office Equipment Account the retirement loss is shown as 2.34% and the Commission allows an annual rate of 3%. The allowances in both accounts are higher than the Company's actual experience of retirement losses. The Commission's reasons for its allowance of depreciation rates are based on statements as to the Company's experience. Reference may be made to the Opinion starting with the last complete paragraph on page 45. Quoting a clause from it "and has also referred to the Company's actual experience during the past nine years as a test of reasonableness".

An expert who makes a study like that of Mr. Gompf takes the Company's experience as the basis for his estimate, but I think this is not what is intended by the Commission, because of the fact that in the table on page 48 [fol. 489] of their Opinion they label those retirement losses as "Company's Experience". Answering the Court's question whether I mean to state than any reference in the Commission's Opinion to the Company's experience was totally wrong—the reference to Company's experience is perfectly correct, but that particular experience should not be used as a measure of depreciation rates. In my view of the matter, what should have been done was to refer to the Company's experience and determine by studies the service life and salvage indicated by that experience. Any reference to the Company's experience as to actual retirement losses is not indicative of depreciation rates. In some cases the retirement losses may be too high.

Another example is on page 46 of the Commission's Opinion, with reference to private branch exchanges, where they show the Company's actual experience of 4.81% and then state "Certainly the allowance of 6.0 seems ample when compared with the Company's past experience". The Commission's Opinion with reference to pole lines, states that the Company's experience indicates a rate of 8.55%, but the Commission adopted the rate recommended by the Company, which is 5.8%. That was one of the cases I had in mind when I said that the actual retirement losses may be too high. Another example is at the top of page 48 of the Commission's Opinion, where it is stated that the Company's experience for aerial wire is 10.41%. There again the rate recommended by the Company was lower than that.

[fol. 490] I want to make it clear that, as in the case of a growing insurance company, these retirement rates do not reflect depreciation rates. Even if the Company had had sufficiently long experience, that experience, expressed in this way, cannot be indicative of the depreciation rate, because the property is growing, and no matter how long the Company had existed, as we are continually diluting our property with new plant, that new plant is contributing very little to the retirement loss and the realized depreciation is not as high as the depreciation rate should be.

In his studies, Mr. Gompf has taken past experience into account, and his analysis of past experience shows the service lives and the salvage percentages out of which you could get the depreciation rate indicated by that past experience. He uses that data as a foundation for his estimate of the proper average life and salvage percentage to apply to the present plant. If, in the opinion of the Commission, he does not give the proper value to the experience, that represents a difference of opinion. I do not believe that the element of the Company's experience, as the Commission has used it, as shown by page 48 of its Opinion, is of any benefit whatever in arriving at a depreciation rate. Broadly speaking, and without reference to what the Commission did, there is no question that the Company's experience is an element entering into the calculation of the rate. When I stated that the Company's experience ought not to be considered, I was referring to the retirement experience on [fol. 491] page 48 of the Commission's Opinion, and I believe that led the Commission, in some cases, to adopt too low a depreciation rate. I cannot conceive of 3% being adequate for central office equipment.

Explaining the difference between the Company's experience as used by Mr. Gompf, and the experience which I say the Commission used: The Company's experience used by Mr. Gompf was its actual experience in average lives of the different classes of property. The experience used by the Commission had no relation to average lives, but was merely the dollars of retirement losses sustained over the 9 year period 1924 to 1932, related to the plant that was in service during that period. If the Commission had used the Company's actual experience as to average lives, the rates found would have been higher than Mr. Gompf's rates, because Mr. Gompf used longer average lives than were

shown by the Company's experience, in order to make allowance for the difference in conditions. As to where the Commission obtained what is called the Company's experience: I presume that came from the annual reports, which show the retirement losses, and also show the amount of plant in service.

Mr. Gompf gave figures for average service lives shown by experience as developed in his studies. He used the same figures which the Commission mentioned and other figures too. He did not confine his investigation to just this 9 year period. The 9 year period in some cases was included in [fol. 492] the experience that he examined, but what he was doing was analyzing the past experience for the purpose of determining what it showed as to average lives. The two things are entirely different. On the one hand you have experience as to retirement losses, which is analogous to the death losses in a growing fraternal insurance company. On the other hand, you have an analysis of the lives of plant which would be analogous to an insurance company's analysis of human life experience.

The Commission made no determination of service life. All the Commission did was to find depreciation rates, and I think they were basing those rates primarily merely upon the dollars of retirement losses related to plant in service. Referring specifically to page 48 of the Commission's Opinion for private branch exchanges the composite rate of 4.81% is the relation of retirement losses sustained during this nine year period for the station equipment accounts. This did not represent the Company's experience as to life in any way, but merely represented what the retirement losses had been. It is the percentage of the retirements during a period of 9 years to the total amount of plant in that particular item but the retirements during those 9 years relate not alone to the plant that was in service during those 9 years, but relate in large part to a smaller plant which had been in service prior to those 9 years. The percentage is too low. The factor of growth in the property makes the percentage of retirement losses less than the depreciation rate. This is due primarily to the large amount of new material which went into the plant during those 9 years, which increased the amount of plant in serv- [fol. 493] ice, but was not contributing sufficient retirements

to be representative of the depreciation rate. I think the figures in Mr. Gompf's statement show this.

Take the case of toll pole lines. Referring to page 9 of Exhibit A-39, and glancing across the upper chart on that page, you see lives ranging for the most part between 16 and 18 years. It was much shorter for the studies ending in 1931 and 1932, and somewhat longer for years prior to 1922. But take 17 years as representing the average of that service life experience. Then relate that to the net salvage experience shown down below, which I should say would average about a negative 5%. We would find then a depreciation rate of about 6.5%. The Company is not proposing a rate of 6.5% because of the large retirements that occurred during the latter part of the period. It is using a life of 22 years, a longer life than is indicated by its actual experience. For this particular class of plant, toll pole lines, it is using a rate of 4.9%, contrasted with a rate of 6.5% that it would get out of its service life experience. Looking at the retirement losses shown in the Commission's Opinion, page 48, they were very large and averaged about 8.5%. But the Company was not proposing a rate as high as that. That, perhaps, is a poor illustration to use, because it works in the opposite direction. The point that we were discussing was where the experience would give too low a rate, and in this case the Commission did not allow the rate shown by experience but adopted the rate recommended by the Company.

[fol. 494] I think this other point might help in clearing this up. Referring again to the retirement losses for central office equipment, that 2.34%: Mr. Gompf stated that for offices actually retired in the past, the average life had been between 9 and 10 years, and let us call it 10 years. Ten years, with no salvage, would indicate a depreciation rate of 10%. That is the Company's experience as to the service life for offices that have been completely retired but the Company is not proposing a rate of 10%. It is considering not only its past experience, but also what it expects to be its future experience with respect to central office equipment. As a result, the rates that it proposes are 5.6% for manual equipment and 4.5% for dial equipment, or a composite of 5.3%. The Commission is allowing 3% based upon the Company's retirement losses of 2.34%.

There is uniformity in the general accounting practice of Bell Companies as to the dividing line between maintenance and depreciation, and this uniformity is secured by what we call a list of units of property. These units of property specify the dividing line between maintenance and depreciation, by specifying the minimum units or the minimum quantities of plant, which, when replaced, will be given fixed capital and depreciation accounting treatment. All smaller units or smaller quantities would be charged to current maintenance. Take the case of aerial cable. One of the units of property is a span or more of aerial cable, including not only the cable itself, but the steel suspension strand and the rings in which the cable is hung. If a span [fol. 495] or more of cable is replaced, it is retired from the capital account and charged to the depreciation reserve, and the new cable installed is charged to the capital account. But since the suspension strand and the rings themselves are not units of property taken separately, any amount of strand or rings that might be replaced independently of the cable, would be charged to current maintenance. Because of this uniformity of accounting, a comparison of the depreciation rates of Bell Companies would be a comparison of rates based on the same principles of accounting practice.

As to how the depreciation rates of The Chesapeake and Potomac Telephone Company of Baltimore City, the Plaintiff, can be compared with the depreciation rates of other Bell Companies: One way to make that comparison would be to take the individual class rates and compare them with the rates of all the other companies. If we were to do that, we would have a mass of data to be compared. There are 21 other companies besides the C. & P. companies in the Bell system. In two cases, Chicago and New York, separate depreciation rates are used for the large cities, so that we would have 23 sets of depreciation rates. And there are 22 classes of depreciable property; so that with 23 sets of rates and 22 classes of property, there would be a mass of something over 500 depreciation rates to be compared. Another way of making a comparison would be to apply the depreciation rates by individual classes of property to the same property. For example, the rates of the C. & P. [fol. 496] Company might be applied to the property of another company, and a comparison made between the amount of depreciation expense that those rates produced, and the

amount of depreciation expense actually produced by the rates of the other company. That method would give a quick overall comparison between the rates of the C. & P. Company and the rates of any other company, and I have prepared an exhibit showing such a comparison between the rates of this Company and other Bell Companies.

(Thereupon there was offered in evidence by the Plaintiff an exhibit marked "Plaintiff's Exhibit No. A-40".)

On the first page of this exhibit is a summary sheet showing the names of the Bell Companies, excluding the C. & P. Companies. In Column A we have the actual amounts of depreciation expense charged by those companies during the year 1933. In Column B we have the amounts of depreciation expense which those companies would have charged had they been using the current C. & P. rates adopted April 1, 1933. The last column shows the ratio of the expense actually charged by each company to [fol. 497] the expense which would have been charged at the rates of this C. & P. Company. On the first line, the figure .95 indicates that, over all, the depreciation rates used by the New England Telephone Company during the year 1933 were 5% lower than the rates of the C. & P. Company. On the second line, the figure .96 indicates that the rates of the Southern New England Company were 4% lower than the C. & P. rates. On the third line, the figure 1.19 indicates that the rates for New York City in 1933 were 19% higher than the C. & P. rates.

This exhibit has greater significance than to indicate that all of the Bell Companies use the same methods. It also shows that there is not a wide discrepancy between the actual depreciation rates used by the Chesapeake and Potomac Company and those used by other companies. The Illinois Bell Company in Chicago has exactly the same ratio as the Chesapeake and Potomac Company of Baltimore City.

Cross-examination:

Referring to the Opinion of the Commission in this case and its reference to the Company's experience, I have been informed that the figures used by the Commission seem to have been taken from the annual reports. A check made from the Company's more detailed records, showed that the

percentages were substantially the relations of net retire-
[fol. 498] ment losses to plant in service for that nine year period. I would not undertake to say that I know the processes of the Commission's mind in referring those tables to those rates.

Referring to page 46 of the Commission's Opinion, where the Commission says, in connection with building and central office equipment which total more than $15,000,000 of the total depreciable plant:

"When reasonable consideration is given to the change in busines conditions and consequent lengthening of service life in these elements of property, the rates of 2% for buildings and 3% for central office equipment are believed to be ample."

That particular language does not indicate to my mind that the Commission was governed exclusively by the Company's experience, but the language in the sentence before that does so indicate. It is said that the allowances by the Commission are substantially more than the Company's actual experience and then the Commission uses the words "when reasonable consideration is given" to some different factors, they think that the proper rates should be 2% and 3%. Taken together, these two items are a very large proportion of the property.

(In answer to questions from the Court as to the source of the Commission's figures, it was stated by Counsel for the Commission that the Commission considered the past nine years' actual experience of the Company. As to what [fol. 499] particular experience was considered, it was further stated by Counsel for the Commission that there were certain exhibits and testimony in the Commission proceedings showing the retirements each year, and that he thought it was on the basis of those exhibits and the testimony relating thereto that the Commission determined the retirement experience as a matter of fact.)

The Bell Companies accept and follow the so-called straight line theory of estimating service life in determining annual depreciation expense. The only change I know of in depreciation rates which this Company has made within the last two years, is the one made April 1, 1933, which was a reduction owing to the extended service life

of several classes of property, due to the smaller effect of inadequacy at the present time. You might say that when you change your rates in a system of straight line estimate of service lives, you necessarily change the direction of your straight line; for example, if an average life of 10 years had been used for a certain class of plant, and due to changed conditions that average life was increased to 14 years, you might say that you had changed the line. Taking, as suggested, the analogy of the straight line, it would necessarily have to change its direction when you changed your estimate of future life.

The straight line method of computing annual depreciation expense spreads what the Interstate Commerce Com- [fol. 500] mission calls the service value of the property as uniformly as may be over its service life; service value, as they define it, is cost less net salvage. It is correct to say that the Bell Companies accept the method for that reason. As to whether the argument that it is fair to present and future subscribers to take annual depreciation on an equal basis, rather than on a retirement basis, necessarily assumes that the rate of depreciation now is different from what it might be later on any given item of property: the rate might be the same and the argument would still be true.

The objections that we have to the retirement theory and that the Interstate Commerce Commission has, is that it does not represent the amount of depreciation expense accruing in the property, that is, there is no recognition under the retirement theory of the item of depreciation expense until the plant is actually retired. No provision is made for the creation of a reserve against which charges may be made for property when it is retired. The theory does not recognize any provision for future retirements but merely takes them as they come. I believe Mr. Crunden, in his testimony before the Interstate Commerce Commission, said that the adoption of the retirement theory had been the cause of financial disaster of some companies in the past. It is correct that the position of the Bell Companies is that any given item of property ought to be treated equally from the standpoint of depreciation expense, even though the rate of loss of service value is not uniform over that period of time.

[fol. 501] (Thereupon the following quotation from the testimony of Mr. A. B. Crunden on March 20, 1928, appearing on pages 893-4 of the record in I. C. C. Case, Docket 14700, was read by counsel for the Commission to the witness):

"Meantime it is a certainty that the presently existing plants of the telephone companies are undergoing depreciation. The principal constituents of the plant have varying lengths of life and serve many different subscribers in varying degree. That charges to cover their original cost can be made to the subscribers who happen to be receiving the service of the plant at the time when it is retired, is by no means a certainty. Accounts kept on the retirement basis may result sometimes in total cost higher than the subscriber can reasonably be asked to pay. On the other hand, a straight line basis by charging equal amounts of depreciation expense in equal periods of use is equitable for all subscribers."

So far as I know that statement states substantially the theory of the Bell Companies. I do not understand that [fol. 502] this quotation assumes that the rate of depreciation in service value is less at the present time than it will be when the property is retired. As to whether it assumes, in reference to equal treatment for all subscribers who use a particular item of property, that the subscribers who use it in the early days of its existence do not use up so much of it as the subscribers who use it just prior to its retirement: I do not believe that is what is means. I think what is meant is that there should be charged to operating expenses during each year of the life of a unit of property, the same burden per dollar of investment.

My objection to the retirement theory is that the consumption of use is not divided equally over the years of the service life of any given piece of property. Primarily the straight line method distributes the burden uniformly over the whole service life. If you follow the retirement theory, you would be charging to expense amounts for depreciation of plant only when the plant was retired, and you would not be charging any amount during the service life of the property. Whether that would result in an undue burden or not at any particular time is, I presume, a question of circumstances.

I do not think that the quotation from Mr. Crunden's testimony which was read, assumes that the actual loss in depreciation in service value is not equal. Talking about service value as cost less salvage, it is not correct to say that the Bell Companies recognize that for any given piece of property the consumption of service value will not be [fol. 503] in a straight line. For any given piece of property I consider that the amount which should be charged to operating expense is equal over its service life. Property that is used in furnishing service is consumed in service and the question is how shall you spread the cost of that consumption of the property. A great many life tables have been prepared for groups of items of property and they reflect, as a general proposition, comparatively small proportions of property retired during the early part of the life span. The proportion of retirements continues to increase as the life goes on.

It is true that generally speaking, when all causes of retirement are considered together, mortality is higher in the older years of a property's life, but not with respect to particular causes of retirement, as for example storms, which destroy plant irrespective of age; road changes and things of that kind. As to whether it was to get away from the mortality curve that the Bell Companies think the straight line method is better than the retirement method for handling depreciaion expense: We do not get away from the mortality curve at all, nor do we get away from the effect of the mortality curve for present users of the property. Let us take the case of a group of property units which we will say have an average life of 10 years. Some of those units will go out of service when they are one year old, some when they are two years old, and so on; some of them may last to be 20 or 21 years old. The average life of the whole [fol. 504] group is 10 years. Now the straight line method, as it has been specified by the Interstate Commerce Commission, and as it is used by the Bell Companies, will assign to each one of those units, whether it lives one year or whether it lives 20 years, the same burden of depreciation expense. That is a particular application of the straight line method.

(Thereupon counsel for the Commission read to the witness a portion of the testimony of Mr. A. B. Crunden on

March 20, 1928, page 890 of the record in Interstate Commerce Commission Case Docket No. 14700, as follows:)

"In the plants of growing telephone companies the realized depreciation or current retirement loss is considerably less than the straight line expense, and if the company's rates for the service were adjusted on the basis of the inclusion in the operating costs of retirement charges which were less than the amount demanded by the straight line basis, they would certainly suffer financially in the long run. If the straight line provision is calculated to require in the long run the actual loss and no more than the loss, then retirement charges less than the straight line [fol. 505] charges could not cover the actual loss."

All that quotation indicates to me is that under the retirement method, where you are not recognizing losses that you are going to eventually sustain, you are not correctly stating your operating expenses. If you are going to correctly state your operating expenses, you must recognize that at some time you are going to retire all the plant that you have, and that you should make accruals against that retirement. I agree that this is fair as to all subscribers, present and future.

In answer to the question if it is fair for the purpose of annual depreciation expense to treat all subscribers equally, why is it not equally fair in ascertaining a rate base to treat present and future subscribers alike in making deductions for depreciation accrued. You are now getting into the question of value and I do not think an engineer should try to set up theories of value.

[fol. 506] ALLEN B. CRUNDEN, a witness of lawful age, was produced by and on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, plaintiff, and testified as follows:

Direct examination:

I am Assistant Comptroller of the A. T. & T. The principal part of the financial side of the problems that arise relative to the financing or assisting in financing of the

Associated Bell Companies is concentrated in the Comptroller's department. This includes any cases where any of the Associated Bell Companies have issued bonds, and also has to do with the issuing of stock by the Associated Companies.

I have prepared an exhibit showing the cost of money to the A. T. & T. over a period of time.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-41".)

This exhibit shows the average cost of funds used in the business of the A. T. & T., and it shows separately the capital stock money, the premiums and surplus, and the various kinds of indebtedness. The amounts are the average amounts for the year 1933. Opposite that is shown [fol. 507] the dividends and interest charges, and then a third column shows the average rate per cent. paid on various kinds of money used in the business.

The first line contains the figures for capital stock on a par value basis. That is, it shows that there is over $1,866,000,000 of par value of capital stock. The capital stock has a par of 100, so by pointing off two places, it will give the number of shares. Immediately adjacent to that figure is the annual dividend for the year 1933, and a ratio which shows that the average rate paid on the capital stock was 9%. The next line shows the capital stock premiums of $268,000,000 plus. These draw no specific return, and the second and third columns show zero. Then there is a total line which relates the dividend payment to the sum of the capital stock and capital stock premiums. Capital stock premiums arise from the sale of stock above par, which has the effect of slightly reducing the 9%. We have the opposite of watered stock; Stock sold at more than par value. The figure on the third line of $2,134,000,000 represents about $114.40 per share of money originally paid in by stockholders for the stock.

The next item is the surplus of $339,000,000 and that being added, it shows what you may call the total capital stock equity $2,474,000,000. When the dividend is related to that figure, it shows the average rate paid to be 6.79%. That figure of $2,474,000,000 represents $132.57 per share. [fol. 508] The next item represents capital stock instalments. When people pay for stock in instalments, we allow

them interest, and the average rate of interest on those instalments during 1933 happened to be 4.62%. That amount is shown in the second column expressed in dollars, $617,000.

The next item is funded debt, which represents the outstanding funded debt of various kinds, such as debentures, collateral trust bonds, etc. The amount outstanding during the year was $421,000,000. Interest was $23,662,000, yielding an effective rate of $5.62%. When I say the effective rate of interest, I use the term to distinguish it from the coupon rate of interest. That is, this rate here includes the cost of selling the bonds, in addition to the coupon rate, that is, the cost of syndicating and selling the bonds and the other expenses connected with the issuance, such as the engraving, the registration of temporary and definitive bonds, and other expenses connected with bond issues that I guess everyone is familiar with. There are several series of different rates on the bonds.

The next item represents loans from associated companies, amounting to $11,301,000, with interest at the rate of 5.88%. Under our plan of organization, if associated companies at any time find that temporarily they have more working capital than they need for their own purposes, the A. T. & T. is willing to take the money off of their hands and use it for general Bell System purposes, repayable on [fol. 509] call. That happens principally in connection with new bond issues. If is, of course, necessary, in order to float a bond issue, to float it for more than you need right away; you cannot be running into the bond market at frequent intervals. So the associated companies sometimes find themselves with some extra cash on hand, and the custom is to turn it over to the A. T. & T., but solely for the purpose of facilitating the financial arrangements of the associated companies. In other words, we have no upstream loans in our companies of the kind that have come into disrepute during recent times.

The rate of 5.88% is the same as the rate charged the associated companies, that is, the same rate applies in both directions. That is true in regard to the money that is shown here and in regard to miscellaneous money generally. But in the case that I mentioned where an associated company floats a large bond issue and asks the A. T. & T. to take over a relatively large sum, the arrangement usually

is that we take it over at the effective rate of interest incurred by the associated company. For example, suppose one associated company were to float a bond issue and the money cost them 5.53%, then the A. T. & T. would take over the temporary excess, whatever it might be, and allow the associate company 5.53%.

The last item represents notes payable to the pension fund trustees, the interest rate being 4%. That represents money which has been turned over to the pension fund trustees in connection with the Employes' Pension Fund. Then [fol. 510] that money has been taken back and used in the business of the A. T. & T. and 4% interest paid thereon. Of course, this pension plan has been in effect as a trustee arrangement a comparatively short time, and we have been in a very troublous period, and the question has been, what is the wisest thing to do about those pension fund moneys, in order that a reasonable rate of interest can be obtained, and yet insure perfect safety. This arrangement of the A. T. & T. taking the money has been made as probably the best under existing conditions.

The figure in the lower right hand column of Exhibit A-41 is the composite figure, or the weighted average of the cost of funds to the A. T. & T. It is the reciprocal weighted average of all of the different kinds of money and all of the different kinds of annual disbursements for interest and dividends, which are included in the table. I suppose it is, to a certain extent, novel to speak of a dividend rate as cost of money, and yet it is the way we run our business. That is, I would not attempt to introduce this as the cost of money, except as I felt that it represented a reasonable cost of money. For instance, we might have a dividend in there of 20%. Obviously, that would not represent the cost of money; or it may be 2%, and then it would not be representative, for the opposite reason. But this statement here represents what we feel it is necessary to pay in order to attract capital; and it is based on our experience.

[fol. 511] Technically, there is a difference in the rate for borrowing and the rate through investment. In one case we have payment of interest on indebtedness; in the other case we have profits paid to the owner of the business. They are radically different in principle. But from the modern standpoint, at least the way we run our business, we comprehend them all under the general term of cost of

money, because the thing has reached this pass; regardless of the fact in economics that the owner of the business is, you might say, an entrepreneur, while the other man is your creditor, the fact is that the little fellow that tries to invest in large enterprises of our type is looking for an investment. He wants a certain amount of speculation in it. He wants to feel he is the owner in the business, but he does not want something too speculative; he is not the typical entrepreneur type. We are producing something here, or hoping that we are producing something that makes the best of both worlds. And I think it is very necessary in this country that something like that should happen, because Americans are a pretty go-ahead race; and I believe that we can best obtain money in this country if we obtain parts of it from the various fields that are available, and attract the different types of minds of investors looking towards the business. For example, we issue first mortgage bonds in the associated companies themselves. They are a very high grade, rated AAA by Moody, and they are legal investment for savings banks. That appeals to one class. Then we have collateral trust bonds of the A. T. & T. that are not quite so good. They are legal investments in a very few areas, but they appeal to another class. Then [fol. 512] we have preferred stocks and common stocks. There are all different ways of getting money. I think it would be disadvantageous to try to get all the money on bonds, for example, because the man that wants to put his money in bonds is interested primarily in safety; and the more bonds you get into an enterprise, the more you get what I might call the trustee type of mind dominating the enterprise. Now, on the other hand, the more you emphasize the stock element in an enterprise, the more you get the opposite type, the speculative type. Well, we do not want the very speculative type in our business, but we want the conservative minded speculator: The man, who wants a common stock investment, but wants it under such circumstances that it is stable. For that reason, we discourage melons and the dividing up of stock, and all that nonsense in our business. We try to sell stock from time to time at what it is reasonably worth, and pay a dividend that the man can reasonably expect to secure. In other words, we try to attract capital and keep a flow of money coming into our business from all the sources that we

ought legitimately to avail ourselves of, and to have centered on our business the different types of investing minds, which in that way promotes constructive criticism.

We have not sold any stock in the last few years. The last time we increased our stock and sold it to the public was a couple of years ago—just about the time things were going bad. It is correct that we have maintained our $9.00 dividend rate in the last 2 or 3 years, even though it is more than our actual earnings. We have maintained it in [fol. 513] the sense that we are taking a considerable part of it out of surplus, but that is what surplus is for. From a legal point of view, I suppose the figure of 7.87% represents the cost of money to us 2 or 3 years ago, rather than this year. If we wanted to issue $50,000,000 of stock today, we would have to sell it on a better basis than 7.87%; that is, better from the standpoint of the purchaser. I do not think we would try to sell any stock today. The stock is selling at 118, and that would evidence, under present conditions, the absorption of existing stock, with no market for new stock, or very little market; so we would not try to issue any. If we wanted to raise a large sum we could not float it in bonds today; it is just out of the question. 15 or 20 years prior to 1929 we could have raised money at the rate of about 5⅓%, providing we gave a first mortgage lien on the physical properties, and kept the amount of the issue down to about one-third of the total amount of the sound value, and as we tried to crowd the thing more than that, we would have to pay a higher rate for money. Of course, the more bonds we put in the more the risk would be on the junior securities. Rates on bonds where the bonds are protected by first mortgages, of course, are at lower rates than compensation which must be paid to stockholders who carry the substantial risks of the business.

[fol. 514] It is possible to increase the returns to investors by that method, and it has been the favorite custom with a great many companies. Within reasonable limits, I think it is entirely legitimate, but carried to the extreme that it has been carried by some people in this country, I think it is unsound, and particularly in the case of the telephone company, which supplies virtually indispensable service, and countrywide service, that has no place to enter into semi-speculative practices.

Taking our stock and surplus of $2,500,000,000, I don't feel that we could have put any of that into bonds, in addition to the other bonds that are outstanding in the Bell system. I differentiate between the cost of money to the Company and what is commonly called yield on a bond or yield to the first retail purchaser in the open market, plus the cost of floating the issue on an annual yield basis. If we can take an issue, for example, in the Illinois Bell Telephone Company, with which I was connected, the cost of money to the Company was 5.53%, but the purchaser who bought the bonds, the first purchaser who bought the bonds on the retail market only, received a return of 5.3%, the difference of approximately .23% was the cost of flotation?

Before leaving Exhibit A-41, I would like to make one comment in view of what has been said about the cost of money. This 6.59% represents the rate of current annual out-go, and I have included in this exhibit our surplus. To get the real cost of money, we would have to have a margin for surplus, because it is necessary to have a somewhat [fol. 515] large surplus and, in fact, it would be a mathematical absurdity to include past surpluses in this picture and yet include no allowance for surplus in addition to what is required here for the annual requirements.

I have also prepared an exhibit showing the cost of money in recent years for the associated companies.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-42".)

This exhibit has nothing to do with advances of money by the A. T. & T. to the associated companies, but has to do with bond issues to the public by the associated companies, that is, an individual issue by one of them only. These issues were not guaranteed or endorsed by the A. T. & T., but were issued on their own basis by mortgaging their own local properties. The first column shows the name and also indicates the order of issue; the second column shows that the securities are based on first mortgages or, in a few cases, refunding mortgages; the statement also shows the par amount of issue and the yield to the first purchaser in the retail market, and the cost to the Company. The Illinois Bell bond that I used as an illustration is the first one shown under the heading of the year 1923.

I would not consider the last two years as a time to issue bonds on favorable terms. I would not make any attempt to issue bonds since the late unpleasantness began. It is [fol. 516] not humanly possible to put out a large bond issue under existing conditions. It is my opinion that at the present time the C. & P. Company of Baltimore could not advantageously market an issue of bonds.

Whether the rate of return which this Court will have to consider should be fixed with reference to these extraordinary conditions, or rather, with reference to what we hope will be the return of normal conditions, is partly a legal question. It is difficult for me to say, but I can meet it by applying just ordinary financial sense to it. It seems to me that we have got to distinguish between what is a fair return over a reasonable span of time, and what you would adopt as a standard for testing the thing at a particular moment of time, which might be at any stage in the business cycle, and if you are going to do that, I would expect to find that rates had been set at a reasonable level in times when you were not in one of those peculiar conditions. Then, I suppose the law would require that you determine what is a fair return at the existing moment of time, and then on the basis of those two facts determine what you ought to do. It is perfectly certain that a company won't earn the same percentage on any business, whatever that business is, in each of the years of its existence; the company has got to fluctuate. For example, if you set the rate of return at 7½%, you might find it earning 6½%, and another time it might be earning 8½%. That is one factor that would have to be considered. The other is what it could obtain money for under a reasonable financial program conducted over a recent period of years, or looking forward a few years into [fol. 517] the future. That is about as near as I can come to it.

I stated that a company, either a new one or an existing one, can get a certain amount of money at a low rate of interest if the existing security holders subordinate their rights to the new money and make it a first lien.

I am familiar with this Company and its financial condition. I would suggest that a large telephone company, operating in this general part of the country, would require a return of about 7½% to 8%. That is the rate below which

it would not be able either to grow if it had to get its money from the public or to be organized afresh. It might be financed by obtaining all the money on capital stock, in which case it would have to pay a dividend of about 7% and retain some margin for surplus. There must be margin on which to go and come, and the typical investor looks unfavorably upon enterprises that pay out all of their annual earnings. He wants to get an adequate return on his investment, but he expects to see a margin retained for the corporation, in order that there may be something to which they can charge losses which come up which are not properly chargeable to operating expense, and which will enable the corporation to outride periods of financial and commercial disturbance that might otherwise cripple or even destroy it. It might have a bad effect on its credit.

[fol. 518] If we were enjoying an average return of 7½%, and our problem was how to make our average slice as attractive to the public as we could, my idea of a set up to accomplish that purpose would be something like this. If a large telephone company suddenly were to change hands and someone would ask me a reasonable set up of capitalization which the new owners might apply to the sound value, I would take something like this, providing the market is reasonably favorable. You might take 35% of the sound value and cover it by bonds, first mortgage bonds. In the case of a telephone company, you could not expect to get that money for less than about 5%. Now, on each $100 of your proposed capitalization, you would have to pay 5% of $35, or $1.75. Then if you wanted to have a preferred stock issue, as a good will feature or something of that kind, you might put 15% into preferred stock, which would have to be callable at a premium, and the rate would be 6½%. That would give you 6½% on $15, or $1.00. That brings it up to $2.75. Now, you would have to have at least half of the entire set up covered by a good solid substratum of common capital stock, in this case 50%, that would have to bear 8% dividend to be esteemed in the market as a long term proposition—you would require $4 for that purpose. That would add up in all to $6.75. It would be necessary to have 7½% as a permissible return, because you have to add something to surplus, and if you take 1% annually as a margin for surplus, you jump from 6.75% to 7.75%.

[fol. 519] We have a different kind of asset set up in the A. T. & T. We own the stock of the associated companies and the set up of the A. T. & T. would probably be in the nature of collateral trust bonds. I do not think we would have any preferred stock, most of it would be in common stock, because that is the safest thing to do. Really it would be desirable for the corporation to finance entirely through common stock, because then it would have always the greatest freedom of action.

I would not say that the A. T. & T. general corporation ought to have 35% in bonds, except as about a maximum. It ought to try and cut down its bonded indebtedness, because the responsibility upon the parent corporation in the case of a nation wide utility, like the A. T. & T. is very great and its freedom of action ought to be very great.

Cross-examination:

I do not remember whether I testified in regard to rate of return in any rate cases that arose in 1928 or 1929. If I had, I would have advocated for those years, for a Company like this, a rate of return of about the same, that is, 7½% to 8%. The rate should fluctuate in accordance with general conditions affecting the long term investment market, which is the market in which we deal and which affects [fol. 520] the general part of the country. If we were in Texas or perhaps in Kansas, I do not know that I would suggest the same set up at all, but I do not think that the rate should fluctuate because we are in the depth of the worst depression this country has ever known.

If you try to get money at the depth of the depression, it would cost you more for the money rather than less, and that brings out a sort of paradoxical feature connected with rate of return. It is dependent on what other people could do with the money. You can go out and get plenty of very high yielding bonds today, but to my mind it is not consistent to inflate the rate of return, because we are in the bottom of the depression.

(Hereupon counsel for the Commission read to the witness a quotation from the majority opinion in United Railways vs. West, as follows:)

"What is a fair return within this principle cannot be settled by invoking decisions of this Court made years ago

based upon conditions radically different from those which prevail today. The problem is one to be tested primarily by present day conditions. Annual returns upon capital and enterprise, like wages of employes, cost of maintenance and related expenses have materially increased the country [fol. 521] over, which is common knowledge. A rate of return upon capital invested in street railway lines and other public utilities which may have been proper a few years ago no longer furnishes a safe criterion, either for the present or the future."

With reference to that quotation, wages have decreased in some lines and not in others. But I am not an expert on wages. I would not care to testify about wage levels in all parts of the country. This quotation does not suggest to me that the rate of return varies with the rate of those things like wages, cost of maintenance, and related expenses in various directions. What that means to my mind is this, that you have got to preserve the credit of the corporations or assure their financial soundness. Now, there may come times when money is very hard to get, and yet it is necessary to have, and so far as the corporations must have money, they must be protected in getting it. Under conditions where you must conserve the credit of the corporation by appropriate action, it is proper to take it, but you cannot merely, because business is depressed, take measures that would destroy the credit of corporations.

The C. & P. Company of Baltimore City, when you scram- [fol. 522] ble together the various forms of capitalization, is called upon to pay out about 7.7% without any margin for surplus. In discussing a rate of return, I was talking about 7½% as the return required on the sound value of the property. If you start out and form a telephone company, I say a fair return is in the neighborhood of 7½% to 8%. I do not have figures here for the individual Bell Companies. None of them are making that return. Many of them have had to cut their dividends during the depression. Some have cut out dividends and some have reduced dividends; this Company has reduced dividends.

It is true that there has been an enormous falling off in the rate of return to business generally. The rates for other businesses attended by similar risks and uncertainties have not declined, but have gone up. You have to pay more

for bonds now than you would have had to pay for them formerly. To put it the other way, from the standpoint of the purchaser, he now can get a better bargain in a bond than he could before the depression broke. That is, the price of bonds has kept down and the yields have gone up.

I am not familiar with the study made by the Department of Commerce pursuant to Senate Resolution No. 220, 72nd Congress, showing the income of national business and governments in 1933 was only 46% of what it was in 1929, but I know that there has been a great decrease in income. Corporation earnings have decreased considerably, and that is the outstanding characteristic of this and every depression.

[fol. 523] What the Maryland Company has actually earned on the sound value during the past 10 years depends on what is the meaning of the term "sound value." My meaning of sound value, as a financial man, is what has been plowed into the business and what we need to meet the requirements of investors, but that has nothing to do with the value of the physical property and the going concern. I have no figures that show the fair value of this Company's property for rate making purposes.

As I understand it, one thing the Courts consider is what the property costs, and another thing is what the value of the property is, what it would cost to reproduce. Just like settling a fight about a horse: If one man has a horse belonging to another, one way to satisfy the contending fellow is by giving him a new horse of exactly the same kind. If the man bought the horse yesterday, you could easily see what the value of the horse was, you could tender him one of of the same kind or the cash. But if he bought the horse 10 years before, what he paid then would not be any criterion as to what the horse was worth today. So, as I understand it, the Courts have required that both items be considered. I have listened to this evidence going in, some book figures and some figures showing reproduction cost. All I am asked to do is to say what would be a fair compensation to investors on any given set up.

[fol. 524] (Judge Coleman:) Supplementing what Judge Soper has said, may I ask you this: The Commission says on page 61, "As a matter of fact, the Company, so far as the Commission's records disclose, has never earned as much as 7½% either on the value of the property, as found by the

Commission, or on its cost, as shown by the Company's books, yet it has prospered." Would you say that that statement needs qualification, or are you prepared to answer that?

A. If I follow that correctly, I concede that in the period following the War that the reproduction cost would have been considerably higher, properly found, than the book cost of the property. If you relate the return to the reproduction cost, of course you would get a bigger sum than the Company would need to cover its capital disbursements. As the Company plant went on, the pre-War price level and the new post-War price level—as old property was taken out and new property was put in—the two things would tend to draw together, they would not be exactly the same. But it is characteristic of the Bell system in general that reproduction cost and original cost have tended, generally speaking, to come together. I don't know of any Bell system company that went in immediately following the abrupt change in price level and demanded a return on reproduction cost, and there is not so very much difference between the two things. I have not seen the figures [fol. 525] in this particular case, they cannot be very far apart.

When I say that I think a 7½% rate is fair, I am applying that to any amount that it would be fair to set up in reproducing a corporation. I do not say 7½% on the reproduction value, but on any sound value that a financial man would take as a basis of capitalization. As a financial man, I would take the sound value of the property, whatever it was. The sound value of the property would have to be determined for me by some expert who could go out and value the property and tell me what it was worth. My conception of the fair value of the property is what a willing buyer would pay a willing seller under the circumstances surrounding the transaction. I know you cannot buy and sell big telephone plants, but I know you can break down these big plants into their component parts. I mean the fair market price of the property where there is not any pressure to sell. The only figure that I have heard stated as a value was [fol. 526] Mr. Sloan's going concern figure. That was one item, and as to the rest of it you would have to consider all that the Court has before it as criteria. I think that the fair value should be determined independently of the rate of re-

turn, and I am told that those are two distinct legal concepts. I make no statement that I think this Court ought to make its findings on the rate of 7½% on the evidence as to reproduction cost new less depreciation. I say that is a fair rate to apply to what the Court finally concludes to be the fair value of the property. From the standpoint of that piece of expert testimony, I am not interested in what the result is going to be in dollars. I am asked here to say that you need to get money to cover a certain sound value, for instance, $100. Now, of course, the corporation faces two ways. It has to render service to the public, and it is regulated in its arrangements, and I understand that regulation proceeds in this country on the basis of fair return on fair value. Now, the corporation must turn around and deal with its investors. It must interpret those legal conditions to them. When it does that, it must make payments to them which are sufficient to assure the credit of the corporation, and keep those investors satisfied, and keep the door open for additional money. That has a strong bearing on fair return, but it is not fair return per se, because fair return, as I understand it, is the relations of the customers with the property, whereas returns from securities are the relations of the corporation with individual investors. And as [fol. 527] I see it, it is up to the Court to interpret that relationship.

The Company, as I understand it, is in Court because it conceives that the present rate schedule ought to be continued, and the Commission would like to cut it. Now, then, there is an issue; and it might be perfectly right for the Court to take a fair rate of return on fair value, which would set a sum as a standard of comparison considerably higher than the Company is receiving, because here we are in a period of depression, and it cannot be expected that the earnings of the Company will follow a mathematical line on fair return. I do not say that I am inclined to think that the net operating revenues of the Company ought to be raised $1,000,000 a year.

As I understand it, the minimum rates that may be imposed on public utilities by law are those that will cover operating expenses and yield a fair return on fair value of property. Now, that, as I have always understood it, is the test. We cannot as a right ask for more than that. And that is a rule by which the Courts measure what the Com-

pany is actually getting. Now, if it is getting less than that, then the rates would appear to be unreasonable. But it does not mean that the Company should go out in a depression and ask the Court to raise its rates to that level, because that would fly into the face of ordinary economic fact. The Court, I think, would be justified in case a company came before it which was earning 5% or 6%, where as the Court [fol. 528] has said that the rate was 7½%, and demanded an increase in times when conditions were bad, they might say, no, you wait until things recover, and you will get what is nearer to a fair return, and you will probably be able to earn more than a fair return when the conditions become prosperous, because the law does not say that you cannot earn more than a fair return out of fair rates, as I understand it. Now, it may be that when the time comes, that the company might have an opportunity to recoup in those times of prosperity, the Commission might refuse to let it recoup. They might cut the rates and take away that excess. And then, as I understand it, the Court would be unable to protect the Company in that respect, because that constitutional limitation would set a bar to that, and they would say you must get a fair return as your go along.

Assuming that $39,000,000 is the amount which had been plowed into the Company, a return of 7½% would give $2,925,000. This would allow the Company to pay the 8% dividend on the common stock, 7% on the preferred stock, cover its interest bearing indebtedness, and would leave a margin for surplus of $75,000 a year. That surplus is a little skimpy. This would enable the Company to cover its payments on tis interest forms of capital obligations, but carry an insufficient margin to surplus.

I would not say that if a public utility like this ought to have a return of 7½% on its sound value in normal times, that a return of 6% in times of adversity would be about reasonable—not under the practical conditions of regula- [fol. 529] tion, because as soon as the Company went through the other half of the business cycle and tried to recoup the loss of 1½% for the period involved; and they might have several years of depression;—it could be met generally with a demand for reduced rates, and it never would be able to get an average of 7½%, and the result would be it would have 6% during part of the time and 7½% the remainder of the time.

Whether in a time of business depression, when the Company has lost a large part of its economic power to make a substantial sum of money, a rate which would give you 6% is as good comparatively as one that in good times would give you 7½%, I should imagine is a very profound legal question. You see, the Courts have set up a standard for the measurement of returns. I don't think it is very clear at the present time, if you will allow me to say so, with due respect to the Supreme Court. I think the country has to go through the cycle a few more times before we really get at the true inwardness of it. It is possible that the fair return might be made to swing with the business cycle, or they might set up an invariable standard just as a normal, knowing that the Company cannot conform to the hairline of that rule, but that there must be a swing backwards and forwards in the operations of the Company. I think the latter is the way it has always been considered, as far as my limited knowledge of the decisions goes, as I get them reflected in the financial press and otherwise.

[fol. 530] I think that the fair rate of return to the Company ought to be at least 7½% in good times and in bad times, irrespective of any great loss. I think that would be more gratefully accepted by investors to have the Court determine that reasonable standard of fair return as a measuring stick, and then let the operations of the Company fluctuate about that.

[fol. 531] Morton M. Prentis, a witness of lawful age, was produced by and on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, plaintiff, and testified as follows:

Direct examination:

I am President of the First National Bank of Baltimore, which, I think, is the largest bank in Baltimore. I have had experience in the purchase and sale of securities and am able to tell too what kind of securities can be sold and bought.

(The witness's qualifications as an expert commercial banker were admitted by the counsel for defendants.)

I am also on the Boards of institutions that make considerable investments—the United States Fidelity and

Guaranty Company, the Maryland Life Insurance Company, and one or two others.

If this Company had to be financed, either as a new company or on the basis of its present value, in whole or in part, in such manner that there were to be sold to the public securities of such a kind as would most economically get money for the Company, I do not believe at the present time that you could sell any bonds. I heard Mr. Crunden's testimony and thoroughly agree with him as to the con- [fol. 532] servative policy of approximately one-third funded debt, depending entirely upon conditions as to whether you want preferred and common stock. At this time the resistance is great to any new securities whatever. I think it would be practically impossible to sell any, particularly in this community.

I think any business must have sufficient net earnings to maintain its credit and to attract the confidence and money of investors. That must include enough for reasonable interest charges, dividends on one or more classes of stock, depreciation, taxes, operating expense and something left over for surplus. In most businesses you cannot normally attract capital under 10% at the minimum and, frequently 15% or 20%, depending upon the nature of the business. I heard Mr. Crunden's testimony, but we have all more or less standard methods of measuring things, and I do think that the Company should be entitled to earn, if it can, 7½%. It is my opinion that if the Company were held down to a lower rate and not permitted to earn that much, it would make it difficult, if not impossible, to put through a sale of its securities.

Cross-examination:

My figure of 7½% is based on a fair value. I cannot appraise the property. Let us say that we could get a group of investors here locally, who would like to buy this Company if it were practicable to operate it as an inde- [fol. 533] pendent or separate telephone company, without having to be hooked up with the national system. After appraising the sound value on which they could earn, which would be the useful equipment, plant and so forth, you would have to earn a minimum of 7½% on property of that kind, I believe, before you could interest any investment money.

In order to attract capital to this Company now, with the connection they have with the A. T. & T., I must preface my opinion by saying I do not believe you could raise any money right now through bonds. The resistance to all types of new issues is just one you cannot overcome at the moment, but over a period of time I think it is only fair to take an average of a conservative amount of funded debt, say, not exceeding one-third—I believe Mr. Crunden said 35%—with an overall cost of 5% on a new security. You might get it a little less than that. The underlying telephone bonds are selling on a considerably lower yield basis, but I do not believe with a new company you could do that. You would have to have a seasoned obligation. For instance, if we placed on the market here a new issue of bonds of the Chesapeake and Potomac Telephone Company even at 5%, the large buyers ordnarily, such as institutional buyers through New England, would not immediately purchase the bonds. Before a new security is purchased as an investment for trust funds it has to be seasoned for two or a few years and the Company must have a satisfactory dividend record. I think [fol. 534] the Company could possibly sell some preferred stock at 6½%.

Comparing this Company's credit with that of the Consolidated Gas and Electric Company of Baltimore, I think this Company's credit is just as good on the set up, because it has not the huge funded debt, but it could not finance as favorably as the Gas Company. I am aware that the Consolidated Gas Company issued a large amount of bonds yielding 4.12%, maybe it was in 1933, although I was under the impression it was in 1931. There have been one or two periods when there have been expectations that business was getting better and certain utilities have been able, in the gas and electric business, particularly, to do some very, very favorable financing. The Gas Company at that time retired 5½% obligations and issued 4% obligations. They called them at a premium. I would like to call your attention—I think I am correct in the statement—that the majority of the Gas Company's obligations which have been funded during the last 8 or 10 years, have invariably been refunding operations from very high rates into lower rates. Now, a new company could not do that.

I do not believe that this Company's indebtedness to the A. T. & T. could be funded with the public to the [fol. 535] amount of $4,000,000 represented by bonds. I do not believe you could sell bonds right now publicly in Maryland. As to whether the Company could go to any bank in Baltimore or New York that had available funds, and borrow that much money for half that interest rate of 6% as paid to the A. T. & T. today, I think that if they came to my bank we probably would give them a lower rate than 6%.

I notice Mr. J. P. Morgan the other day took up some underlying bonds of the Coast Line, $6,000,000 or $7,000,000, bearing 7%, and loaned them money for 6 months at 4% with the privilege of one renewal. I know the railroad objected to it, because it said it was a little uncertain for that purpose. Let me give you another indication concerning the Virginia Electric and Power Company, which operates a great many utilities throughout the State of Virginia. One of their subsidiaries is the Old Virginia Railway and Power Company operating around Norfolk, which has a bond issue of 5% of, I think, $10,000,000 or $12,000,000, maybe a little less than that, coming due July 1st of this year. This is a first refunding bond. There are only a few underlying liens ahead of it. They have offered right now to the bondholders to deposit their bonds and they will pay them cash enough to make up the difference at the rate of 5½% and issue them 10 year 5½% bonds with a convertible feature. That corporation earns more than three times its interest.

[fol. 536] I do not believe you can get any new long term money in any substantial amount at all. If this Company should attempt to float an issue of $5,000,000 of bonds tomorrow on a 4½% basis for 20 years, I do not think that our bank would bid on them.

[fol. 537] Fred G. Boyce, Jr., a witness of lawful age, was produced by and on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, Plaintiff, and testified as follows:

Direct examination:

I am Vice-President of the Mercantile Trust Company of Baltimore, and have been in the investment banking

business ever since I started work. Before going with the Trust Company, I was with the firm of Townsend Scott and Company.

(Hereupon counsel for the Commission admitted the qualifications of the witness as an expert.)

I have heard the testimony of Mr. Prentis and Mr. Crunden in this case, and I personally agree with the views which they have expressed. Unquestionably, to finance a corporation of this character, they should have a rate of 7½%, and unquestionably, they would need a surplus over and above their dividend and interest requirements. The banker-investor would undoubtedly view with distrust a company which distributed its entire earnings in the long run without setting up anything to surplus.

Cross-examination:

When I say 7½% return, I mean over a period of 10 years on the fair market value. I consider that the credit [fol. 538] of this Company, that is, the C. & P. Telephone Company, is unusually good. Since 1929 the securities market, for one reason and another, has practically been closed for new issues. I think it is generally understood to be the case that there has been a decline in the rates of return since 1929 earned by other business attended by coresponding risks and uncertainties.

Redirect-examination:

There is a difference between a general decline in the earnings on a certain security, and I am speaking with reference to its present value as compared with its past value, and a present decline in its earnings on par or book value. I think that you could probably buy Triple A Bonds now and get as good a rate of return as if you had gone out to buy them in 1929, before the boom broke. There is not a very great deal of change in the price.

[fol. 539] HARRY C. GRETZ, a witness of lawful age, heretofore produced by and on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, Plaintiff, was recalled to the stand and testified further as follows:

Direct examination:

I have prepared a forecast of the estimated revenues and expenses for the current year of 1934.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit A-43.")

The first column of this Exhibit A-43 shows the actual results for the year 1933, which is put there for the purpose of comparison with the forecast for 1934. Before the Commission we had an estimate for the year 1933 based on about 5 months' actual experience at the time. This corresponded fairly closely with the actual result when the year was over. The final figures for the year showed the net revenues a little under what we had forecast it would be. It is my duty to make this type of forecast from time to time and it has been the practice of the Company to have these forecasts made in the ordinary course of business. The forecast shown in this exhibit has been made in the [fol. 540] usual course of business and participated in by all departments of the management of the Company. It is a collective forecast of what is expected for the year 1934.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-44.")

Exhibit A-44 is a summary of the evidences of value already put in evidence, reduced to tabular form for the purpose of comparison. The investment cost was taken from Exhibit A-2. The working capital is taken from Exhibit A-33. The reproduction cost new and the reproduction cost less depreciation for the year 1932 are taken from columns A and C respectively of Exhibit A-31. The corresponding items for 1933 are taken from Exhibit A-32. The division I have made between interstate and intrastate property is based on the stipulation filed in this case. There is another thing that I would like to say as to the data for January 1, 1934; the average additions to property estimated for the year 1934 is $75,000, and this is included in the average book cost, column E; in the reproduction cost new of the physical property, as of January 1, 1934, I have included $1,400,000 which was testified to by Mr. Speer as representing the January 1, 1934, increase by the Western Electric Company of certain apparatus and equipment, the depreciated figure being $1,225,000.

At the bottom of this Exhibit is a comparison of depreciation expense based on value in accordance with the United [fol. 541] Railway's case, and depreciation expense based on cost. In order to obtain the expense in relation to value, I have taken the percentage of the annual depreciation expense in relation to the average investment cost of the property, and applied that percentage to the reproduction cost new.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-45.")

(Exhibit A-45 as originally filed was revised in accordance with the "Amended Stipulation (Intrastate Business)," dated March 31, 1934, and the revised exhibit was subsequently filed in substitution for the original exhibit, as "Plaintiff's Exhibit A-45 Revised.")

Exhibit A-45 shows the evidences of value from Exhibit A-44 in relation to net telephone revenues under existing rates, and also after giving effect to the reduction ordered by the Commission. This Exhibit A-45 is an arithmetical calculation from data already given. I have not added any adjustment figures. It merely collects the data for quick reference.

(Thereupon there was offered in evidence by plaintiff an exhibit marked "Plaintiff's Exhibit No. A-46.")

One of the purposes of Exhibit A-46 is to show the Company's wage rates in comparison with some Baltimore wage rates of skilled workers in the Building Trades, which was offered by the Auditor of the Commission in the Commission proceedings. That is illustrated on Chart No. 1. It can be readily seen that the Baltimore wage rates were considerably over the levels of the average for the telephone workmen. And it can also be seen that since 1931 there has been an extreme drop in the wage rates for the building trades and a sort of leveling off of the Telephone Company's actual wage rates. The chart is shown in terms of [fol. 542] wage rates per hour. Now, with the extreme drop in the building trades, the average got down to 89 cents per hour, and the average of the Telephone Company is 87½ cents per hour. These wage rates of the Telephone Company are for construction forces only and do not include anything, for example, for operators. The maximum

average never got above 90 cents an hour. The wage level rose from 1923 until 1932, and continued to rise even from 1929 on. We felt back in those early years shown that our wages were out of line with what was being paid in other businesses, and we did make an attempt to increase those wage rates. We did not put everybody up automatically, but increased the maximum rates, and under our policy of giving increases for additional experience, we shortened the periods when we gave those increases. The effect was a gradual increase, but while this was being done wages in other industries were going up too, and we were not making up that difference.

From 1929 our average wage level rose for about one year, and then it remained practically at that level, there having been no increases at all since 1930. It is correct that it is substantially higher in 1932 than in 1923, but as I have said, we felt we were definitely out of line with wages in other industries. It is rather significant that after the Baltimore wages had taken their extreme cut in 1932, our wage level at that time was still under the low point for wages in the building trades. The proportion of construc-
[fol. 543] tion costs attributable to wages runs from about one-quarter to one-third for property that the Company itself constructs, that is, exclusive of buildings, central office equipment and multiple private branch exchange equipment, which accounts are about 40% of the total, so that the proportions I have given apply to 60% of the total property.

The second purpose of the Exhibit A-46, and particularly the other three charts, is to bring out a fallacy in the index method followed by the Commission. On page 25 of the Commission's Opinion, there is shown a series of translators including these Blatimore wage rates. The translators from page 25 are the same as the percentages in the little rectangles year by year, and those percentages were obtained by relating the average wage for any one year to the 89 cents for 1932. In other words, taking the year 1931 where the level was at $1.30 per hour, it is necessary to multiply that $1.30 per hour by 69% in order to bring it down to 89 cents. The purpose of a translator in that instance is to put the actual rates that were paid in each one of the years on the level of the last year, and that level is indicated by a dotted line just under the 90 cents per hour.

Moving on to Chart No. 3: That shows what happens when the translators determined by the Commission are applied to the Telephone Company's wage rates. Instead of first adjusting telephone wage rates up to the levels of the Baltimore wage rates, the effect of applying the translator is to [fol. 544] make a deduction in the Telephone Company's wages actually paid. Instead of having a straight line across at 90 cents per hour, the amounts are irregular, ranging from a little less than 50 cents an hour up to a little less than 60 cents an hour.

The fourth chart of this Exhibit indicates the proper method of deriving and applying translators. In order to get up to this Commission level at 1932, the translators should have been based on what the Telephone Company actually paid, and the figures in the rectangles on this fourth chart show for all but the last two years what that amount would be. And, for example, the 1924 translator should have been 139 instead of 84, which the Commission used. This series of translators was used along with some other series and a weight applied to each one, and then having weighted all of those, the Commission applied the weighted translator to the dollars that the Court found in 1923. The Commission was not concerned with what our wage levels were or with what our material prices were, but took our total dollars, and without making any analysis of those dollars, applied these index numbers. This Exhibit is merely for illustration purposes and is intended to show an error in the method by which they either derived or applied the index number, and the same reasoning would apply to all the other indices.

As to the weighting of the several series of index numbers by the Commission: I have been unable to find anything to [fol. 545] reveal the principle of the Commission's weighting of the several price indices that it used, and the Commission's Opinion seems to be silent on how the weights that were applied to the particular series were obtained. Page 26 of the Commission's Opinion gives the full list of the series they used to build up what they called a fair value translator.

Answering the Court's question in reference to the chart which appears opposite page 29 of the Commission's Opinion: The curve marked "Telephone Construction Composite" on this chart was an approximation that I had used in the informal sessions with the Commission before the

rate case was started. The "Company's Exhibit 35," which is referred to on page 26, was not used in the reproduction cost of the property as offered in evidence in this Court. The final reproduction estimate offered here was slightly under the results that I obtained by using the Telephone Company's composite trend, which I think gives a fair indication of the trend of construction costs since 1923. This chart in the Opinion does not tell the whole story, because it starts out by placing everything at 100 in 1923, and if you go back to a base of 100 in 1914, all of these series which the Commission used were at different points in 1923, and not at a common point, and the Telephone Company construction cost was one of the lowest.

Answering the Court's question as to whether we have made any study to see what would be the result of applying [fol. 546] the Commission's method of valuation, if it had been consistently applied to prices prevailing prior to 1923, back as far as can be taken, instead of applying them wholly to 1923 as a starting point: We have prepared both a chart and a table on that point.

(Thereupon there was offered in evidence by the plaintiff exhibits marked "Plaintiff's Exhibit No. A-47" and "Plaintiff's Exhibit No. A-48".)

Referring first to Exhibit A-47, the Telephone Company construction curve in the upper chart is placed in comparison with certain indices of construction costs which the Commission uses. The Engineering News Record, for instance, has an index number of building construction cost; the Richey Index is an index of construction costs of electric light and power properties, and the so called I.C.C. index refers to the telegraph and telephone lines of the railroads.

The general shape of that curve over the full period shows that telephone construction costs have been right at the bottom, and in 1923 the index was considerably lower than any one of the three that are shown here. The lower chart shows the trend of telephone construction costs in comparison with commodity trends; and, of course, commodity trends have no labor of installing. In that comparison the telephone construction curve does not show up so well, and at 1923 it was quite a little higher than the all-commodity trend. Now, in the Commission's chart (page 29 of its Opinion) all these indices are brought together at

[fol. 347] 100 for 1923, where I use that broken line in order to emphasize that point of time. It can be seen from the chart how the shape of the curves can be changed by bringing them all to the common date of 1923. The commodity indices had had an extreme peak in 1920, and had come down in 1921 and 1922 during the rather uncertain conditions at that time. As to the period from 1923 to 1933, the high level was from 1923 to 1926. There were no real peaks at that time. It is correct that this was the time of the expansion of the telephone companies, and as far as the Western Electric prices for apparatus and equipment were concerned, the curve of prices had started down in 1921. But as to the effect of Western Electric prices, the prices of apparatus and equipment are only a part of the total telephone construction costs. Western Electric prices for apparatus and equipment amount to between 30% and 33% of the total telephone construction cost, the balance being made up of other types of materials such as go into our outside plant, and of telephone company labor. Other materials which we were using and our own labor rates, were going up. The policy of the Western Electric I think acted to stabilize telephone construction costs, and I think it is borne out in the index here. The heavy line in the lower part of this Exhibit A-47 is not the trend of Western Electric equipment prices, but is the trend of total telephone construction cost, which includes buildings, central office equipment, station apparatus, labor and everything else which goes into the plant. Referring, for example, to buildings: The Engineering News Record, which is a trend of building costs, which is the top curve on the top [fol. 348] chart of Exhibit A-47, is at extremely higher levels than the telephone construction cost. So to the extent that we were putting up buildings it tended to negative the reduction we were getting from the Western Electric on apparatus and material. Using 1914 as the base, the telephone construction cost index is higher than the All-Commodities Index. I think the chief reason for that is that there is labor of construction in our trend, while in the All-Commodities Index there is not. In that respect our trend is not different from the Engineering News Record, Richey, and the I. C. C. indices, all of which have construction labor in them and all of which are higher than the All-Commodities Index.

As to whether I think that it would be in our favor, if we were endeavoring to translate our costs during this period to 1932 prices, to use the All-Commodity level: The answer is no, because if you take the average point during the period from 1923 and put it in relation to the 1932 point, you have had a reduction in the all-Commodities Index from 1929 down to 1932, and we have not experienced such a reduction. Everything is put in relation to 1932 in the method followed by the Commission. They have taken the very lowest point in the All-Commodities Index and equated everything to that point.

I testified in the case before the Statutory District Court 10 years ago, and produced there estimates by which I pursued a method of bringing book costs up to the costs of that date. There was this difference between the method [fol. 549] I employed then and the method I have employed in this case. In the 1923 case, which was before the Court in 1925, we took the book costs in 1914 as the starting point, the gross annual additions by accounts and obtained index numbers to apply to these costs. Then we obtained a translator also for the retirements, as they were handled differently from the gross additions, in the manner similar to what we did in our present reproduction cost study for station equipment. That was an approximation at that time, as we had engineers make complete appraisals of the property, and my study was merely to restate the books as of 1923 to see how they compared with the engineering appraisal at that time. In the present proceedings what we have tried to do, in our study, using index numbers, is to approximate an engineering appraisal for the total property in an entirely new valuation as of today. The results in the 1923 study, starting with our 1914 book costs, were obtained by translating book costs into dollars of 1923. The translator was the ratio between the current construction costs at 1923 and the costs which were going on the books in 1914. We got that ratio by studying the comparative prices of labor and materials that went into construction. On Exhibit A-31 I have built up the reproduction cost new. I did not have a similar study in 1923. The study I made in 1923 is comparable to page 6 of Exhibit A-31, except that [fol. 550], we started out with the book costs in 1914 and then took the gross additions each year from 1914 to 1923, and the retirements for each year from 1914 to 1923. That

was the method followed in 1923 for all accounts. In this 1932 appraisal this method was used only for the Station Equipment Accounts because we thought the other methods which we have used were more adaptable for the other accounts.

Referring to Exhibit A-47, if this case had been held in 1928, it is true that the All-Commodities Index would have been more favorable to us than the use of our method, if we had started out with the actual telephone construction costs in 1923. But when we come to the present time, that is not true. Answering the Court's question: It is correct that comparing 1914 with 1932 telephone construction costs, that they are approximately 50% higher in 1932 than in 1914. There is nothing relative about that comparison, it is absolute.

The valuation made by the Court in 1925 as of 1923 was to take the 1914 book costs and apply the All-Commodities Index, thus increasing the value. If the telephone construction index as shown on Exhibit A-47, had been used instead of the All-Commodities Index, the valuation as of 1923 would have been higher, because the telephone construction curve was roughly 165, and the All-Commodity curve was something less than 150 in 1923. The reason that the application of the All-Commodity Index produced a [fol. 551] valuation higher than actual cost, was that for all of the property installed at pre-War levels and still in the plant, the All-Commodity curve was higher than the levels of the actual construction costs. The cost of reproducing the property in 1923 was at higher levels than the All-Commodity Index at that particular time. If in 1923 the Statutory Court had adopted the telephone construction trend instead of the All-Commodities Index: I think that the appropriate figures are that the telephone composite trend would have given $37,300,000, as compared with Mr. Robinson's appraisal of $37,500,000. The Statutory District Court in 1925 had an illustration such as that given in Exhibit A-47, of the trend or curve of the telephone construction costs, and of the All-Commodity trend. They did not have the benefit of the trends of construction costs like the Engineering News Record, Richey and those others.

In answer to the Court's question, whether as is stated in the Opinion of the Statutory Court in the 1925 case it

is a fact that the application of the All-Commodity Index was considered fair on both sides: I do not think that Professor Hollander's testimony went to the point as to whether the All-Commodities Index was applicable to the telephone dollars to produce the reproduction value of the Telephone property, but was offered for the purpose of corrobrating the fact that there had been a rise generally. [fol. 552] Explaining Exhibit A-48, the first line shows the result that was found by the Court in 1923 by using the All-Commodity Index which at that time consisted of 404 different items. This 1923 figure was $33,644,000, excluding going value and working capital. Lines 2 to 10 are other indices of which the Commission made use in getting that weighted translator, and which could be carried to 1914. If these other index numbers had been applied in the same way and to the same dollars that the Court used for 1923, the result would have been as shown in Column A as of 1923. The present All-Commodity Index, that is, the 784 series, would have given $31,300,000; Bradstreet's, also a commodity index, $32,000,000; Engineering News Record, $45,000,000; American Appraisal Company, $44,000,000, and so on down the line as shown in Column A.

The next two columns were introduced to show the difference when the same index is applied in the same manner, but starting with a fixed amount of two different dates. Column B uses 1914 as the starting point and brings the result down to 1932. The result of the All-Commodity Index is just under $35,000,000; Bradstreet index, $29,000,000; Engineering News Record, $50,00,000; and so on as shown in Column B. By bringing everything together at 1923 on the basis of the All-Commodity Index, that is the $33,644,000, and merely trending that by the several indices we get the figures in Column C.

Illustrating with the Engineering News-Record Index: [fol. 553] The application of this index from 1923 to 1932, using the same method followed by the Commission and with the Commission's starting point, the result is $42,000,000, but if we go back to 1914 and use the books on the same dollars that the Statutory Court trended to 1923, and carry that calculation down to 1932, the result is $50,000,000.

I think one of the tests of the applicability of an index series to a particular property is whether you can produce the same result if you started out at different times,

but if you get different results by starting at one time as compared with another, there must be something wrong with the index as being applicable to the particular property.

In answer to the Court's question, supposing that starting with 1914, and using the proper index, we bring all of the costs up to 1923, would the result in 1933 be the same if the index was then applied to the 1923 costs as if the index were applied to the separate years to 1933: Arithmetically the result should be the same, if you deal with the same kinds of property and you have data for each of those years and current data. It would also require an analysis of gross additions separately from retirements because retirements going out in a particular year at book cost or cost levels of a different year, have no relation to the cost levels of that year of retirement. If these things are done the answers would be mathematically correct.

For the 1923 studies it is correct that I applied my index [fol. 554] both to the 1914 book cost and to the reproduction cost new which the Commission determined as of 1914 as the result of appraisals by their own engineers and by the Company's engineers. This reproduction cost new was something over $1,500,000 higher than the book costs.

Cross-examination:

Referring to Exhibit A-44, for an analysis of reproduction cost new, column A ties into Exhibit A-31, and column B ties into Exhibit A-32, being the reproduction cost new as of December, 1932 and December, 1933, respectively. The difference between the January 1, 1934 figure, column C, and the December, 1933 figure, column B, was brought about by an addition of $1,400,000, as representing the January 1, 1934 increase in Western Electric prices for equipment and apparatus.

Whereupon the plaintiff rested its case in chief.

[fol. 555] Whereupon evidence on behalf of the defendants was presented as follows:

Charles W. Smith, a witness of lawful age, was produced by and on behalf of the Public Service Commission of Maryland, Defendants, and testified as follows:

Direct examination:

My name is Charles W. Smith. I am 37 years old, I live in Baltimore; I am the Chief Auditor of the Public Service Commission of Maryland. I have a B.S. degree in finance and business administration and an LL.B. degree; I am a Certified Public Accountant of Maryland and of North Carolina, and a member of the Maryland Bar. My experience as an accountant dates from 1918, when I was employed by the War Department. From 1920 to 1929 I was employed by the Income Tax Unit of the United States Treasury Department. The first 5 years of this period were devoted to auditing returns of consolidated corporations, that is, large corporations with affiliated companies, and the last 4 years were spent as a field auditor, and during this period I examined the books of practically every type of business corporation in Maryland. Since June 1, 1929, I have been the Chief Auditor of the Public Service Commission of Maryland.

I have taught accountancy in three schools in Baltimore, and am now in my fourth year as an instructor in accountancy at Johns Hopkins University. I am a past President of The Maryland Association of Certified Public Ac- [fol. 556] countants, and a member of the American Association of University Instructors in Accounting.

I have prepared a brief historical outline of the Chesapeake and Potomac Telephone Company, with particular reference to its relations with the Public Service Commission of Maryland.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-2".)

Summarizing this historical outline: The Chesapeake and Potomac Telephone Company of Baltimore City was incorporated in 1884, about eight years after the first telephone message was transmitted. It grew rather rapidly, and in the early years of its existence it had a great deal of competition in Baltimore City and throughout the State. For instance, in 1909 there were about 23 telephone companies in the State, whereas there are now about five. The property accounts of these four independent companies amount to less than $75,000.

The Commission adopted a uniform classification of accounts in 1913, and since that time the Company has kept its accounts in accordance with the rules prescribed by the Commission and has followed sound accounting practices. The Company has been before the Commission since the inception of the Commission. The Commission was organized in 1910 and the first telephone hearing was October 24, 1910. The first hearing on rates in connection with values was in 1911. As of June 30, 1914, the Commission [fol. 557] found a value of the Company's property, and that 1914 valuation was really a splendid piece of work, the opinion in Case 690 is a masterpiece, constituting a real landmark for the public utilities of Maryland. The decision was handed down in 1916, but as of 1914. Another finding of values was made by the Commission as of December 31, 1919. In 1924 the Company applied for an increase in rates which the Commission denied, and the Company then took the case to this Court, resulting in the valuation fixed by this Court in 1925 as of December 31, 1923, by the use of index numbers.

I have also prepared an exhibit showing a comparison of values in various recent important cases before the Public Service Commission of Maryland and elsewhere.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-3".)

What I am attempting to show here is that in departing from engineering methods of valuing properties, we are not departing from something which is perfect; we are departing from something very imperfect, and going to something which is less imperfect. In the first column I show the percentage of variation between the respective engineers, engineers of the Companies and engineers for the Commissions. In the first case of the United Railways and [fol. 558] Electric Company, if we eliminate the easements from consideration, the Company engineer was 46% higher than the Commission engineer. The second column shows the Commission's engineer was about 14% under the Commission's valuation. The last column shows the Company's valuation was about 26% higher than the Commission's valuation. If we include the easements, the Company engineer was 75% higher than the Commission engineer, the Commission engineer was 19% under the Commission, and

the Company's engineer was 41% higher than the Commission. The average variation is about 40%, somewhat higher than 40%. As to what conclusions it is suggested should be drawn from this exhibit: Those of us who have had some experience with regulation, are no longer amazed when engineers come in with valuations that are no longer close but are far apart. The reasons are obvious, and when we see engineers' valuations within 50% of each other, we are not surprised. When they go out and inventory, they count every pole, whether they are treated or untreated, they count every cross-arm, every insulator, every mile of each gauge of wire; they estimate foundations of soft soil, clay and rock soil. When you come to labor, you have quantities of labor, material quantities and prices. In pricing you get catalogue prices. Engineers of the Commission write to suppliers and suppliers get in touch with the companies. It is no wonder you get such wide differences; it is something you would expect. I am simply calling attention here to the fact that this case is not unusual because of the wide variations; it is the usual thing. Our [fol. 559] own engineers differ in the same way occasionally.

In the next schedule of Exhibit D-3, I illustrate the various Commission cases in the Public Utility Reports for 1931 and show the excess of the companies' valuation over that found by the Commissions. I am not citing this to show the valuation is higher, but to show the tremendous variations. The fourth case on the schedule is that of the Los Angeles Gas and Electric Company, involved in the recent decision in the Supreme Court decided in May, 1933. The Commission in that case found a value of $65,000,000, and the company claimed a value of $95,000,000. The Supreme Court affirmed the Commission and found that the company's value was 46% higher than the true value.

For 1932 I compare the differences, one is very large, but the average is 47%, due largely to the inclusion of one large item. But here again I would call attention to the fourth case, P. S. C. of Pennsylvania vs. Clark's Ferry Bridge Company. That case likewise went to the Supreme Court of the United States, and very recently the Supreme Court approved the value found by the Commission. It is true that in the Clark's Ferry Bridge case the valuation approved by the Court as found by the Commission was

substantially the book cost or historical costs of the prop-
[fol. 560] erty; and the Court gave great weight to that factor in the Los Angeles case.

I have prepared in the form of an exhibit a balance sheet as of December, 1932 for this Company, with certain related accounting statements.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-4".)

There are no differences between my figures and those of the Company, but there are a few matters I would like to direct attention to. $49,996,000 is the cost of the physical property, and the next group is working assets and accrued items, usually termed current assets, of $1,891,000. That becomes important in connection with working capital. On the next page appear the working liabilities and accrued liabilities with current liabilities of $2,600,000. But there are two items which have to be eliminated, because they are not current liabilities in substance. The first item which must be eliminated is Bills Payable, representing bills payable to the Pension Fund Trustee. The Company sends money to the Pension Fund Trustee and then borrows that money back again and issues notes instead. So at any one particular time the Company owes the Pension Fund Trustee a certain amount of money, evidenced by notes. While these notes are demand in form, in substance they are not
[fol. 561] paid off, so they are not really current liabilities. By deducting that item from the current liabilities, and another item, namely, services billed in advance of $247,000, which is not a liability at all, but a deferred income item, we show the correct current liabilities. The difference between the current assets and the current liabilities amounts to $643,000, as I will explain later.

The Company has paid dividends on its common stock as follows: In 1924, 6%; from 1925 through 1932, 8%; and in 1933, 7%. Since 1923 there has been an increase in surplus of about 140%. As to whether more stock was issued in that period: I am not sure offhand how much stock was issued during that period. In 1913 the Company had $10,000 capital stock and today it has $30,000,000 of common capital stock. The preferred stock of the Company was issued in 1922 and 1923, and was over subscribed. It was offered last week I think on the market at about 117½. It

is callable at 110; that is the danger in buying stock at 117, in that if it should be called you stand to lose considerable money. That is one reason why the stock does not go higher than 117. The dividend on preferred stock is 7%.

The schedule on page 13 of Exhibit D-4 purports to show the increase of capital from 1923 to 1932 and the increase of the depreciation reserve. The first figure of $27,687,000 represents the cost of the Company's fixed capital as of [fol. 562] December 31, 1923. That was the cumulated book cost from the time the Company began business until 1923, less the cost of the property which had been retired during that period. The figures showing the net additions to the Company's property accounts will be used in later exhibits which I will file. There was a total of gross additions during this period from 1924 to 1932 of $43,122,000, and during the same period retirements of $20,819,000. In my opinion this $20,819,000 of retirements represents large retirements of the total of $27,687,000 of property, which the Company owned on December 31, 1923. By this I mean that these retirements represent property purchased before 1923, rather than afterwards. I have an analysis which I will later introduce which makes me believe that is true, and in the normal operations of business, the old property is abandoned first. I heard Mr. Gretz state in his testimony before the Commission in this case that an assumption to that effect is logical. These figures are taken from the books of the Company. The total book cost on December 31, 1932, is $49,990,000.

The lower section of the schedule (Exhibit D-4, p. 13) contains figures pertaining to depreciation reserve. As of December 31, 1923 the depreciation reserve was $6,439,000. There was added during the year 1924 to this reserve $1,517,000. The reserve was reduced by charges to the extent of $1,521,000 for the year 1924. The charges exceeded the additions for that one year, but that is the only year in which that condition occurs. Deducting from the total [fol. 563] gross additions to the reserve of $19,390,000, the total charges of $15,599,000, gives an increase of $3,790,000, bringing the reserve up to $10,229,000 as of 1932. Deducting the reserve of $10,000,000 from the book cost of the property, $49,000,000, we get the net cost of $39,760,000. During the year 1933 the Company had gross additions to the reserve of $2,200,000, although the charges to the re-

serve dropped tremendously. The figures for 1933 are not on the exhibit, as the Company's books for 1933 were not closed until February, 1934.

As to how the depreciation allowance is fixed: The annual amount of depreciation expense has been fixed by the Company. The Company has had a rather free hand in fixing the depreciation expense, though the Commission looks into the matter. During the time when retirements were rather heavy, there was no question raised as to depreciation expense. It is based upon a study of the Company's plant made by the Company. The difference occurs today in this manner: the Company's claim is that depreciation expense should be one figure because it emphasizes inadequacy, and the Commission states that when the plant ceases growing, the factor of inadequacy, as affecting depreciation, ceases to operate and, therefore, the present rate payer should not be charged with the depreciation expense based upon inadequacy because that expense is not accruing.

I understand the general method the Company has used in fixing the annual depreciation expense. It is a study made for the purpose of spreading service value over the [fol. 564] life of the property, by the straight line method. If you have a piece of property which cost $1,000, and that property will last 10 years, you charge $100 each year to expense. The percentage has varied considerably each year. It has varied between 4½% to a little over 5%, except during the War, when it dropped down to a low figure of something over 3%.

Contrasting the depreciation expense the Commission allowed for 1933 with the amount claimed by the Company in this case, the Commission allowed a little over $1,300,000, but that is somewhat misleading, because the Commission's allowance was based upon value and not upon cost. The Commission stated that its allowance for depreciation expense, based upon cost, would be about $1,700,000. The difference between $1,700,000 and $1,300,000 comes about by reason of a reduction in the rate base. In applying the depreciation rates to value, the Commission purported to follow the case of United Railways and Electric Company vs. West in the Supreme Court of the United States.

The schedule on page 15 of Exhibit D-4 is a study of the charges to the depreciation reserve. This schedule shows in

detail the charges to the depreciation reserve for the years 1924 to 1932. I call attention to the next to the bottom line called "Total Charges to Depreciation Reserve". In 1924 the charges are $1,500,000, and 1925, $1,400,000, and so on, hovering about $1,500,000 until we come to the year 1930, when the depreciation charges increase substantially. [fol. 565] Those charges increased by reason of installing dial telephone apparatus in place of manual apparatus. During the year 1930, a large dial station was installed and a manual station was retired, so the retirement of $740,000 in the year 1930 opposite central office equipment refers to the substitution of the central office station. The station equipment retirement in that year was very large likewise. It follows when you change your central office from manual to a dial type you also change the telephones from manual to a dial type. Looking at the averages of amounts charged to depreciation reserve from 1924 through 1929 inclusive, we find that it is about $1,500,000. For 1930, 1931 and 1932 this average has increased by about $700,000. There were some extraordinary conditions in those years as compared with prior years. For instance, in 1931 there was a very severe storm on the Eastern Shore which caused a tremendous amount of damage to telephone property. In 1932 there was a very severe snowstorm in Western Maryland which likewise caused a tremendous amount of damage to all public utilities. In 1933 the storm damage was not quite so severe.

As to the allowance by the Commission, it is less than the $2,200,000 retirements in each of these last few years. You cannot tie the depreciation allowance of one year with the retirements during that particular year. It might vary considerably. As there were extraordinary conditions prevailing in these last three years, looking at a reasonable [fol. 566] forecast for the future, based on a long record, it would indicate that the large additions for these three years ought not necessarily to be kept for 1934, 1935 and 1936. That is one point of this exhibit.

Then there is another point to this exhibit: during this period from 1924 to around the year 1931 or so, the Company grew very fast, had a wonderful growth, and during the time of fast growth you have a tremendous amount of depreciation caused by inadequacy. That is, the demand is growing larger than the equipment can supply. When

a plant grows stationary, or when the customers drop off, that factor is liable to pass out of the picture for the time being and to cease operating. I am speaking particularly of inadequacy, but the same thing applies likewise to obsolescence. The point the Commission has in mind is that this functional element of inadequacy is no longer at work and we go back to the physical basis as soon as its growth is not like what it was from 1924 to 1931. The Commission realizes fully that the depreciation rate reduction ordered is a temporary matter and is only intended to remain in effect as long as we have changes or have our present economic levels. Substantially it is an emergency depreciation rate, but I do not mean that in any technical sense. I mean that there is a change in economic conditions which might be termed an emergency, and these conditions are taken into consideration by the Commission, so that if conditions should radically change again, the Company could [fol. 567] easily come into the Commission and have another hearing and have the matter fixed up on the basis of facts prevailing at the time. Our difficulty with regulation is that when you fix a valuation, after all the expenditure of time and money, it is only good for about five years. It is true that so far as this Company is concerned its changes have come along about every 9 or 10 years, except for the minor adjustments from time to time.

As to whether I wish to draw the inference that the problem of Commission regulation, where there is adequate and honest construction data, would be much simplified if the Courts put more emphasis on historical cost: I think that would be an admirable solution. I do not know the Commission's attitude with respect to this. A valuation or rate case for a company the size of this costs pretty close to $500,000. If the policy suggested by the Court of emphasizing historical costs were adopted, it would make the administration of public utilities a comparatively easy matter. I think the index number method which was used by the Statutory Court in the 1925 case helps to make it a relatively easy matter. To recite the facts in that connection, this case was worked up by the Commission in three months at an extra cost of three to four hundred dollars. I think before I get through I can show the index number method will give just as accurate results as you would get from independent appraisals by engineers.

[fol. 568] The next is page 17 of Exhibit D-4. It occurred to me it would be interesting to know when this Company's property was put into service, what were the price levels during the years the property was put into service, and I have prepared this study to give that information. Taking the first column, balance December 31, 1933, the third item down, namely, Right of Way: The Company, on December 31, 1932, showed on its books a cost of rights of way of $934,000. I distribute that amount back over the years 1932, 1931 and 1930 by this method. During the year 1932 there was added to Rights of Way $26,666; during the year 1931, $32,000, and during the year 1930, $27,000, and so on back until the total aggregates the $934,000, shown in the first column. I do not think there is any serious question about the amounts. The only serious question is about the methods. In other words, I take the $934,000 which the Company owned on December 31, 1932, and show for the year 1932, $26,666. Deducting that amount from the $934,000 leaves an amount to apply to 1931. I take off in 1931 the amount added to that account, and so on for each year. I repeat the process not for the fixed capital as a whole, but for each individual account, so that narrows the chances of error. I carry that study back to 1918, and on page 19 I give a summary.

The next page shows it carried back to 1923, 1922, 1921, 1919 and 1918. On page 19 (Exhibit D-4) I summarize the [fol. 569] two preceding pages. For the year 1932 there was added $3,326,000, or 6.6% of the total. For the year 1931, there was added $4,152,000, or 8.3% of the total. In the last column headed "Cumulative Percentages", the 6.6% for 1932 plus the 8.3% added in 1931, makes a total of 14.9%. The amount added in 1932, 1931, and 1930 cumulates to 26%, and so on down the line. This exhibit then shows that 93% of the property was put into service from 1918 on. In other words, 93% of the property valued in this case on the books at $49,990,000 was purchased and installed from 1918 to date, according to this study.

I would like to call attention to one very valuable test which I was able to make. The fixed capital on June 30, 1917 was $14,500,000; on December 31, 1932, it was $49,000,000. That shows absolutely that 70% of the property was put into service from 1917 to December, 1932. That assumes that none of the property that was in existence

at 1917 has ever been retired. If we say that only 70% of this property was put into service June, 1917 to 1932, we say as a corollary that none of that property in service in 1917 has ever been retired. That proposition is absolutely untenable. We are driven to the fact that 90% of this Company's property was put into service from 1918 down to 1932.

I assume that a certain number of dollars of retirements is of old property as distinct from new. We have it in [fol. 570] dollars and not in articles. The assumption I make in this study is that the oldest property is the first to be retired. The oldest property in that particular case, the oldest central office equipment, the oldest buildings, are to be retired. It is narrowed down somewhat by reducing it to classes of accounts. The present central office equipment which was erected in 1902 or 1903 would be an exception to my assumption. And later on when I apply these items by my index numbers, there is a very substantial compensatory condition. In other words, my method, if it errs, errs in this way. If I show property equipment in service in 1932, perhaps it was put in in 1930. In other words, the year of placement would be moved back somewhat. In other words, if it errs at all, if I say property in 1932, if that is wrong, the property came into service some prior year, 1930 or 1928, that will have a tremendous effect when we come to trending, because the very fact you put this property under the peak of prices of 1920, that will lower its value today.

As to whether I am dealing with estimates and approximations and not with anything like exact figures: These are not exact figures. You cannot get the exact facts, as they are not available except for land and buildings and for central office equipment. And I think as I go along I will make it clear that as far as these items are concerned, I doubt if it makes any difference in our study.

[fol. 571] For the purpose of this study, to show what proportion of the property was put in service during the period of high prices, we know absolutely it was 70%, and that assumes that not one cent of property in service on June 30, 1917, has been ever retired. If we assume that some of that old property was retired, it would increase the 70% and get closer to 90%. It stands to reason that if this Company has had $20,000,000 of retirements

from 1924 to 1932, a great deal of that property which was in existence in 1917 has been retired. There is not any assumption about the 70% figure, so that the region of any possible error lies between 70% and 90%. I admit frankly there may be a chance of error here, but I think it is compensated for. In a later exhibit, when I turn to values, it is compensated for by putting some of this property which I assume has been bought in 1932, back into the higher price years. I have broken down the property into accounts and analyzed each account, and that analysis results in the last schedule (p. 19) of this Exhibit D-4.

I have also prepared an exhibit with a number of schedules, showing suggested index number values for the property of this Company.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-5".)

On page 2 of this exhibit is a graph of prices going back over a long period of history to 1750. The graph is [fol. 572] taken from the All-Commodities Index of the United States Government for the years 1890 down to date. Prior to 1890 there are many studies available. The Aldrich Senate Committee on Finance in 1890 made an investigation into the price levels, and it was pursuant to the disclosures made by that Committee that we had the Bureau of Labor Statistics. The Aldrich Committee carried this study back to 1840. The studies made by the Department of Labor and other organizations go back quite a period in history, and they are all substantially the same. The study I have used here for the period between 1750 and 1890 is the study made by Professors Warren and Pearson, and published by the Bureau of Labor Statistics.

From 1750 up until the War of 1776 we were an agricultural community, and prices were low. The black line drawn across the curve at 70 represents the price level of 1913, which for many years was considered normal. The War of Independence sent prices to the sky; but, as is customary, the prices receded after the War, and went below the 1913 level. And then they shot upward again. From about 1795 to 1812 the prices zigzagged. The high prices were caused by the Napoleonic wars. Napoleon was made Commander of the Army of Italy in 1798, and was banished to Elba in 1814. And during that time he was

engaged in constant warfare. Our exports jumped up from $19,000,000 in 1791 to $94,000,000 in 1801. The zigzags are caused by the blockades exercised by Napoleon, by England, by embargo acts and non-intercourse acts. The [fol. 573] War of 1812 sent prices high again. And after the War we had our first real depression in 1819. It was very severe from a monetary angle, because the first U. S. Bank had ceased to exist, and state banks had issued currency which was practically worthless. We had our era of good feeling in the twenties, the era of canal building, and we went up to above the 1913 level in 1836 and 1837. It is interesting to note that in 1836 there was no national debt. The United States Government had a surplus of $37,000,000, which it turned over to the States. In 1837 the second depression occurred, which was a very serious depression, so serious that Mississippi and Florida repudiated their public debts. After coming out of that depression we began to build railroads.

Gold was discovered in 1848. It is estimated that $500,000,000 of gold came from California within 10 years. Prices went above the 1913 level. In 1857 we had another depression, which lasted but a short time. The Civil War caused prices to soar once more. We issued greenbacks, and we created national banks. After the Civil War, there was a period of railroad building on a very large scale. In 1873 the so-called Long Depression set in. In 1873 the Gold Standard Act was passed. In the year 1832 the ratio of gold to silver was changed to the 16 to 1 ratio which became famous in later history. Prior to that date it was about 15 to 1. From 1873 down there was a very sharp decline in prices, reaching the depth in 1897. Then prices climbed due to the discovery of gold in the Klondike and Colorado, and so forth, and reached the 1913 level.

[fol. 574] Starting with the year 1894 we get interesting sidelights on some Court decisions. In 1894 Reagan vs. Farmers Loan & Trust Company was decided, in which the Court said the costs which might have been incurred in those high price periods before would not be fair value today. In 1898 we have Smyth vs. Ames, when the railroads wanted to use cost as the fair value, and Mr. Bryan, representing the public side of the question, prevailed in his view that cost was not the sole criterion. Prices went very high during the World War, and came down very

sharply in 1921. We had a high plateau of prices from 1921 to 1929. Then prices descended very rapidly, reaching a low in February of 1933 of 59.8, somewhat below the 1913 level. Prices stand today around 72 or 73, slightly above the 1913 level.

During the high-price periods the Supreme Court said you could not take the cost which was fixed in those low price years, 1914 and 1913, and apply them today. In the Central Kentucky Gas Case the Court said that the cost incurred in these higher price days would not be a fair criterion of present value. In other words, the Court decisions which there start the evolution can be understood, I think much beter if you refer them to the economic conditions of the times.

Prices are in a constant state of inflation and deflation, and recalling the statement which I made earlier, that a valuation does not last much longer than five years, I think [fol. 575] it is shown here in this graph pretty conclusively that prices are in a constant state of flux.

Page 4 of Exhibit D-5 shows the index number of the United States Department of Labor. In this study 100 represents the year 1926. The All-Commodities Index number of the United States Department of Labor is the indexing of prices based on 10 classifications, which are given in this exhibit: Farm Products, Foods, Hides and Leather Products, and so forth. The index number shown for each category is the index number as of December, 1933. The building materials index number, which stood at 85.6, is used in my later exhibits. In the lower portion of this schedule is shown a different classification: Raw materials stood at 64.9; semi-manufactured articles, 72.3; finished goods, that is, manufactured goods, 74.8, that is somewhat higher than the All-Commodities, but considerably lower than building materials; non-agricultural commodities were 74; all commodities other than farm products and foods, 77.5. I have here the weights which are assigned to these various index numbers. For instance, Farm Products were 17.2% of the total.

The next schedule (page 6 of Exhibit D-5) was prepared for the Commission case exclusively. When the Commission was hearing the case, the United States Government went off the gold standard. I did not know what effect it would have upon our case. I made a study of English prices,

and found that when England went off the gold standard [fol. 576] its price level was practically unaffected. It went up a few points, and then came right down and stood at the same level. We have been off the gold standard so long now that the matter is not really important.

In the schedule on page 8, of Exhibit D-5, I attempt to value the property of the Company by following exactly the method laid down by this Court in the 1925 case. There is no difference between the method I use here and the method used by the Court, except that I start with the value found by this Court for 1923. The Court started with the 1914 figure. The index is the All-Commodities Index of the United States Department of Labor, which index was used by the Court. On the first line is shown the value of the assets as of December 31, 1923, as found by the Court, and that is the gross value, $36,122,000. Prices changed from December, 1923 to 1932, and there was a reduction in the price level of 36.19%. If you take 36.19% away from the $36,122,000, the answer is $23,050,000. Instead of deducting 36%, however, we multiplied the figure by 63.81%, which gives the same result. We take the increase in assets of $4,000,000 for the year 1924 and that is multiplied by 63.81%, representing the comparison of price levels between 1924 and 1932, and get $2,559,000. That method gives us a gross value of $38,289,000. I then trend the depreciation reserve, as was done by the Court. The depre- [fol. 577] ciation reserve as found by the Court in 1923 was $6,614,000. That is multiplied by 63.81%, the translator for 1923, resulting in $4,221,000. I repeat the process the additions in the reserve every year from 1924 to 2 and get a trended depreciation reserve of $6,850,000. That compares with the book reserve of $10,000,000. I trend total assets on this exhibit because I wanted to follow the Court's method exactly. In other exhibits I trended the fixed capital. The distinction is between fixed capital account and total assets, the latter including securities, cash, and things of that sort.

Suggesting some comparisons: The Court in the 1925 case increased the gross cost of the entire capital, I am comparing fixed capital with the total value found by the Court, and the Court's valuation necessarily includes going value and working capital—the difference between the cost of fixed capital, $27,000,000, and the value found by the

Court, that is to say, the gross value, was an increase of 30%, whereas this schedule reduces the gross cost as of December 31, 1932, by 23%. The Court's value increased net cost by 38%, whereas this schedule reduces net cost as of 1932 by 20%. Putting it in another way: In 1923 the difference between the net cost of the physical property and the value found by the Court was $8,200,000; the difference between the net cost in 1932 and the value shown by this exhibit is $8,300,000. The differences are about the same.

[fol. 578] As to the theory of index numbers in connection with this exhibit: The economic theory of index numbers is something like this. If you invest $20,000,000 in property in 1923, that $20,000,000, in the normal course of expenditure, would be exchanged for a certain number of commodities. In 1932 you are entitled to the same commodities, and this method would give you in 1932 the same commodities which you could have had in 1923 for the $20,000,000. Then there is the economic theory about the dollar being a medium of exchange. After all, that is all the dollar is. It is a medium whereby one piece of property is exchanged for other property. Credits are liquidated by the exchange of commodities. The situation is something like this: A farmer raises wheat; he sells his wheat and gets a check for it, he deposits the check in the bank. He pays his telephone bill or buys stock of the Telephone Company. He draws a check and sends it to the Company. The Company takes the farmer's check and puts it into its bank. The Company then buys poles and draws a check on its bank to pay for those poles. Wheat has been converted into poles by the medium of the dollar. Repeat that process ad infinitum and you will find that commodities really go into the property as much as dollars. There are no dollars actually in the property, there are only commodities. One is exchanged for the other, and this Company's property will be consumed in exchange for other commodities, and when it ceases to be changeable for other commodities, it will cease to have a value, because the only value known [fol. 579] outside of sentimental value is exchange value. It will be exchanged for other commodities.

The index number method may very well give too high a value. We do not claim that it does here, but it may, and for these reasons: First of all, we include all of the prop-

erty which the Company owns, usable property, whether used or not used. So all the property is trended. Second, we make no allowance for scientific improvement. A 1923 automobile is treated the same as an automobile of today, whereas there has been tremendous improvement. No allowance is made for the expense of piecemeal construction, as testified to by Mr. Speer; some of the piecemeal construction of this Company was costly, but the total cost would trend regardless of how high it was. The advantages of the index number method are that it is definite, it is inexpensive, it substitutes facts for theories. We do not have to estimate on what might have to be done, we deal with what actually occurred in the past, just what was done, and it reconciles very serious conflicts between accountants and engineers. The accountant handles all expenditures and classifies them as expenses and capital. When it comes to a rate case, the accountant's figures are accepted for income, but an engineer is frequently employed to determine the rate base, and this procedure very often brings in serious conflicts as regards capital expenditures and revenue expenditures. My objective is to approximate the exchange or market value of this property, which is [fol. 580] emphasized when we trend by the All-Commodities Index. The index figures might bring a higher value than the mere market value for very large property in time of depression, because the larger the property and the more fixed it is in time of depression, the narrower the market, and consequently the lower the proportionate prices are.

Page 8 of Exhibit D-5 uses the same method that was used by the Statutory Court in 1925. The amount of $36,122,000 on the first line, includes the special allowance for Going Value which in 1914 amounted to $705,000. The amount at the bottom of the page of $31,437,000 is the complete valuation of the Company's property by this method.

In the next schedule (page 10 of Exhibit D-5) the United States Department of Labor All-Commodities Index is used again, but applied in a different fashion. I take the Statutory Court's gross value of 1923 of $36,122,000 and deduct what I determine was allowed by the Court for working capital at that time. I cannot figure out the exact amount—the approximation shows it to be higher than $975,000.

In this and later schedules I extract the working capital and then add it in as a separate estimate at the end. My purpose is to trend the fixed capital which the Company has acquired. I also desire to trend the going value. I take the $36,122,000, the gross value found by the Court, deduct the working capital, $975,000, get $35,147,000 for the fixed capital and going value. I trend that by the use of the All-[fol. 581] Commodities Index, and then trend the book cost of additions to fixed capital every year from 1924 to 1932. The gross value ascertained by this method is $37,310,000. Comparing this with the schedule appearing on page 8 of Exhibit D-5: The All-Commodities Index is used in both cases, therefore involving the same index translator series, but in this second study I have applied the translator not to the total assets, as the Court did in 1925, as of 1923, but have applied it to net increases in fixed capital and to going value. Retirements are taken out the year in which they are made. In other words, this is the net asset method. When we took out the retirements in 1924, we took them out at book costs, although we should take them out at the value found by the Court, which was higher than book cost, because they are included in the 1923 value at a higher value than book cost—in other words, if we have a retirement made in 1924 at cost, that cost was incurred possibly back in 1910, but when we start with 1923 it is included in 1923 at a very much higher value, so what we should do is to take it out at the 1923 higher value. We do not do it in this schedule. We take net assets.

The final figure shown in this method as of December 31, 1932, of something over $30,000,000, is merely a suggested value before adding working capital. I might state in passing that the Commission, in finding its value, gave this [fol. 582] All-Commodities Index a weight of 4 out of 31.

On page 11 of Exhibit D-5, I distribute the property additions back over each year to 1914. Now, the Commission's value in 1914 was about 8% higher than cost, so I increased the value of that property which the Company has now, and which I think was owned in 1914, by 8% to conform with the Commission's value, and then I took the additions every year by years from 1914 to 1932, and applied the All-Commodities Index to the cost of net additions in each year. In other words, I go back of the Court's valuation and that

gives me a gross value of $35,000,000, or a net value of $28,000,000. This method assumes that property first put into service is the first retired of that particular type of property. The error, if an error exists, would be like this: I show an addition in 1932 which was really put into service in 1930. I should push it back a few years, and the further back I shove these items to the peak in 1920, the more I will have to reduce them in value to 1932. Illustrating this: We had some property which I showed as an addition of 1930 that was really an addition in 1928. I would have to reduce that property much more than I did, because the reduction in price between 1928 and 1932 is much greater than the reduction between 1930 and 1932. The only further criticism you can make is that when we get beyond this peak of prices in 1920 down to the lower level of 1914, it operates in the other fashion, but when you consider that 70% of the property was put into service during the high [fol. 583] price years, and consider there has been a general trend of declining prices from 1920, I think there is a compensating condition which makes up for any error in allocating the property to the several years.

Eliminating the question of working capital, the difference between the top figure on page 13, Exhibit D-4, of $27,687,000, and the top figure on page 10, Exhibit D-5, of $36,122,000, represents the increase in value as of 1923, as compared to the years in which the costs were incurred, which I understand was arrived at by the Statutory Court by the application of the All-Commodities Index. As to whether the Court used the All-Commodities Index as I have described, I made a check to determine this fact. Mr. Cretz also made a study which he furnished me, and which I have reviewed. I do not think there is any question that the Court did take the All-Commodities Index and trend the cost as of 1914, as shown by the Company's balance sheet, and trended net increases in assets for every year thereafter, and trended Going Value of $705,000 allowed by the Commission in 1914.

I have made the study going back to 1914 as a test in this case, because of the question in cross examination in the case before the Commission, why I did not go back to 1914 and if so what the result would be. They say that I mixed index numbers in 1923 because I used the Court's valuation arrived at by the use of the All-Commodities

Index and applied say the Building Materials Index to that valuation. In order to obviate that criticism I take the [fol. 584] same index and apply it back to 1914 and this method gives a lower figure. This is not a repudiation of the other figures. I personally prefer to start with 1923, but the study going back to 1914 is a test. I think it was logical in 1923 for the Court to trend the total assets as distinct from the fixed plant accounts, but there is a danger which may come in through expansion. If a company should borrow a lot of money on bonds and so forth, you would have to trend that cash along with everything else, but I don't think we find those conditions in this case. I have trended the plant in all of the exhibits except the one in which I wanted to show the results of following the method of the Court in 1923.

Referring to Exhibit D-4, pages 17 and 18: This does not mean that when you get back to 1924, there was nothing on the books of the Company for organization. There was something on the books at that time for organization. It would be better if we included organization and intangible capital together because once these accounts merged. Some part of those accounts has been wiped off. As to whether that suggests at least an uncertainty in the basis of this exhibit when it makes me reach the conclusion that there was nothing in the Company's accounts for this item in 1924, and as a matter of fact that conclusion is wrong: I am not sure about organization. We get into difficulties in intangible accounts because frequently the intangible items are charged off. If you take physical property, for [fol. 585] example, land, the Company did have land in 1924, and in 1917 and in 1899, but a lot of that land has been retired from service. As to Private Branch Exchanges, the study shows nothing for that account in 1925. The Company had Private Branch Exchanges in 1925, but my computation leads me to the conclusion that all of them were retired since that time. In other words, the Company had buildings and land and also some physical property back in 1914 that has been retired since. I am aging the property which the Company owns on December 31, 1932, and in the absence of specific information, the method usually adopted in aging accounts is to take individual accounts as the unit and spread it over the years in accord-

ance with gross additions added to that account every year. That assumes the first property put into service is the first property retired of that particular type. I know that is not absolutely correct. I think it is substantially correct. When I test it by the amount of property put into service since 1917, I find that absolutely 70% of the dollars have been put into service. That assumes none of the property in 1917 was retired. If we assume any of it had been retired, we get above 70%.

This method is subject to a criticism that there are some particular items of old property still in the Company's accounts and still here to be valued, but they are not large items. It is true also that when we exhaust property, for [fol. 586] instance, in 1924, when that same property was left over from 1923 or 1922 or 1920, we favor the Company by my method, because if we put the property back in those years, we would have to reduce that more in arriving at the 1932 value. By this method I have attempted to determine, as nearly as I can, the age of the property that now exists in 1932. This does not mean of course that there was not other property back there in those earlier years that has long since passed out of the picture. I think it is true that this Court is called upon to value substantially a different lot of property than it was called upon to value in 1923. This is especially true when we understand that the gross additions made to the Company's property since 1923 amount to $43,000,000, and the total cost today is $49,000,000. $20,000,000 of the property has been retired leaving net additions since 1923 of $23,000,000, and in my studies I trend the net additions.

Referring again to Exhibit D-4, page 17, and illustrating the principle of aging accounts by Station Apparatus, of which there was nearly $4,000,000 on the books December 31, 1932: From studying that account I believe it is substantially true that the station apparatus which was in existence in 1927 and former years, has been retired. I do not mean that there was no station equipment back there in those years, but this computation indicates that that equipment was retired. As to whether my figures would be affected substantially by the consideration that during 1930, 1931, [fol. 587] and 1932 there has been a great substitution of material by virtue of the introduction of the dial exchanges: That would be true as to Station Apparatus, and it does

not indicate that it was necessarily in substitution for very old material. A great deal of the apparatus that was in this account before the dial was instituted may have been there only a year or two before. I do not think that that would materially affect the computations I am making, because if that were true, our additions would be carried closer back to 1920 in the higher price years, and we would reduce them more substantially than we do reduce them for 1931, 1930 and 1929, that is, when we trend a cost figure of a higher priced year, we would reach a lower value for 1932. I advance this as an offsetting consideration for the possible percentage of error that may be in these computations because of certain particular items of property that are old and are in the plant. I admit very readily as the Court has pointed out, the possibility of error, but I think there is a very great compensation.

The net additions to fixed capital disclosed by this method of relating retirements back, as set forth in Exhibit D-4, pages 17 and 18, are translated by the All-Commodities Index to arrive at the figure in Exhibit D-5, page 11.

I would like to call attention to the deduction for depreciation or impairment in value. The method I have used in this exhibit is to take 20.46% of all of the gross value as es- [fol. 588] tablished by these trends. The ratio of depreciation reserve on the books of the Company at the end of 1932 to the total cost of property, namely the $49,000,000 item, was 20.46%. I think that is an improvement over the trending of the depreciation reserve. I did trend the depreciation reserve in these exhibits where I have followed the Court's method, but I think this method of taking the percentage arrived at by final relationship of the reserve to cost is a better method, and this method deducts a large amount of depreciation.

I have made a check to see whether the All-Commodities Index trend can properly apply to the trend in the value of buildings, by comparing the values testified to by the Company's witnesses with the All-Commodities trend. I show that in Exhibit D-5, page 12. The same witnesses testified for the Company in this case and the 1923 case in regard to buildings. I took their 1923 value and added the net additions every year, and I trended the value and net additions and arrived at a value of $2,594,000, compared to a value of $2,534,000 testified to by the witnesses in this

case, plus the Company's own overhead. This shows a difference of about $60,000 or about 2%. The index number method gives the higher value. In other words, this shows that the appraisals by the Company recognize a trend in prices for buildings from 1923 substantially the same as shown by the All-Commodities Index.

In answer to the Court's question whether I have made [fol. 589] any comparison of the real estate tax assessments from 1923 to 1932, and observed any trend thereof, I have not. As to whether I thought it worth while to get those figures: It would take some time to get them because there are so many tax districts in the State. As to whether I took them for Baltimore City, I have not done that. The practical effect of this computation is simply to try to test the trend of values as disclosed by the appraisers of buildings. In all of the other valuations I submit, the property is trended as a whole, except in one schedule toward the end, where I have tried to apply a trend to individual accounts. As to whether, when I trend the cost of land, I obtain such a comparable result as in the case of buildings: When I made a test trend for the value of land, I found a much lower value for land than the testimony of the Company's appraisers. The value of land has been stipulated in this case. As to why, if Land is stipulated and in Buildings there is only a small percentage difference between my study and the Company's figures, Land and Buildings cannot be taken out of the case: Our difficulty is that starting with the 1923 value we have no separate value for Land and Buildings because the Court valued the property as a whole and did not give any separate value to real estate and therefore our starting point is not divisible. What I am trying to do here in discussing the trend of buildings, is to justify the All-Commodities Index, not to justify the value of buildings.

[fol. 590] I also tried to test the value of the All-Commodities Index number by applying it to a particular exchange building. I compared one building the same way as I compared the group, and again found that the appraisers for the Company recognized a greater price decline than was given by the All-Commodities Index. In other words, the same appraisers for the Company, giving an appraisal in 1923, and then in a later appraisal in this case, came down a steeper decline than they would have come if they had

applied the All-Commodities Index to this central office building. This appears on page 13, Exhibit D-5.

Referring to page 14, Exhibit D-5: In 1931 the A. T. & T. published a booklet, "Things Worth Knowing about the Telephone", in which it classified the enormous quantities of materials purchased in a single year. In a single year the shops transformed into finished telephone apparatus great quantities of material. I took those materials and I worked out an index number for them on the basis of 1926 being 100; and the index number was 44.66, when the All-Commodities Index stood at 60. And that is true, because there was so much lead and copper and rubber in the property. In other words, these commodities which are referred to as dominant materials in the telephone properties, declined at a more rapid rate than the All-Commodities Index number. These materials were raw materials, and were weighted in accordance with quantities. The prices of raw materials to the Western Electric fell 34% from 1929 to 1932, when the All-Commodities Index fell 32%.

[fol. 591] On page 15, Exhibit D-5, I have compared in the form of a graph the decline in the cost of highway construction in Maryland and New York with the All-Commodities trend. This trend stops with the average of the year 1932. I made studies of some figures in the office of the Maryland State Roads Commission, and the other figures for the New York Highway Commission are published in the Engineering News Record. These costs of highway construction include both materials and labor.

Page 17, Exhibit D-5, is a copy of a page from the book published by the Western Electric Company in 1927, showing the various articles which go into the telephone set, all of them articles in the All-Commodities Index, such as rubber, silk, cotton, flax, wool, iron and lead, and so forth; and they come from all parts of the world.

I have applied trends other than the All-Commodities trend in order to make suggestions as to present value. This group of suggested values is established by commodity index numbers other than index numbers of the Department of Labor. As far as I am concerned, I think the Department of Labor All-Commodities Index is the one to rely on, because I think it is the most accurate, but I wish

to show that the other index numbers would not lead to any higher valuation as a whole.

The figures on page 19 of Exhibit D-5 make use of the index of the National Association of Purchasing Agents. The Association, up until last year, issued an index num-
[fol. 592] ber for the practical purpose of keeping themselves informed as to prices. There were 23 groups of classifications in that index, a larger number than in the Government's Index. I have applied this index starting with the Court's 1923 valuation minus working capital, and using the net increases in fixed capital by years, and I have done that in all of the other suggested values which follow. The application of the Purchasing Agents Association Index gives a value of $25,410,000. The real difference between this and the Government Index is that the Purchasing Agents Association Index does not weight the various items. In this suggested value, as in all the others, working capital would have to be added to give the rate base.

Page 21, Exhibit D-5, shows a suggested value ascertained by the application of index numbers prepared by Dr. Irving Fisher of Yale. He is a noted authority on index numbers and his index is published weekly by the Department of Commerce. This index shows a value of about $28,000,000.

As to the National Association of Purchasing Agents Index appearing on page 19, Exhibit D-5, and the Fisher Index on page 21, Exhibit D-5, I would not give color to those indexes because they are not weighted. The Commission gave these indexes a weight of 2 for the Purchasing Agents Index and of 1 for the Fisher Index out of a total of 31. My chief reliance is the All-Commodities Index of the U. S. Department of Labor. As to why I selected these other
[fol. 593] indexes to present to the Commission and the Court, I tried to make an exhaustive analysis of index numbers. I looked for a great many and used practically all I found; there are only one or two which were left out.

Page 23 of Exhibit D-5 shows the results from the use of the index number compiled by Dun's, following the same method of application as with the other index numbers. Dun's has compiled an index number for many years, and it was referred to by Dr. King in his testimony. There are about 300 items in it, and it is known as a rather stable in-

dex. Dun's is a commercial agency which for years has been gathering information as to credit and commodity prices. This indicates a somewhat higher value. Dun's Index is known as not being so sensitive as other index numbers. It is not true that a more stable index tends to bring out a higher value. What I have in mind will be clear when I discuss Bradstreet's Index which gives a very low value of $24,000,000. Bradstreet's Index is intended to be a very sensitive index and is a precursor of a general rise or fall in prices. It is the oldest continuous index in the United States and is supposed to anticipate general increases or decreases in the price level. Dr. King said that it was confined largely to high priced articles. Both indexes ought to be considered in a test of this kind but I do not think they are of equal value. As to the fact that the Commission gave both these indexes the same weighting in its opinion, I know nothing about the Com-
[fol. 594] mission's ratings.

On page 27 of Exhibits D-5, I apply the index numbers of the Federal Reserve Bank of New York, which was also mentioned by Dr. King. It is different from the other index numbers mentioned and is a general index. It includes different items, industrial prices, farm prices, retail food, rents, clothing, fuel and furnishings, freight transportation costs, realty values, securities, equipment and machinery and, of course, electric prices go into that element, hardware prices, automobile prices and wages. It is a very general index. I believe it is compiled by Dr. Carl Snyder, although it is published by the Federal Reserve Bank of New York in its bulletin. Dr. King stated that it was a fairly good index to measure the purchasing power of the dollar. This index gives a somewhat higher value, and the Commission gave it a rating or weighting of 2.

On page 29 of Exhibit D-5, I compared graphically from 1925 to 1932 three index numbers with the All-Commodities Index. These other index numbers were published after 1923, so I could not use them. They were lower on December, 1932. The indexes are published by the Michael Kennedy Service, the Annalist, published in the Annalist Magazine, and the New York Fertilizer Association.

Coming to a number of Building Material indexes: On page 31 of Exhibit D-5 is the United States Department of Labor Building Material Index, one of the component

indexes which goes into the All-Commodities Index. It [fol. 595] does not cover farm products, or foods, or other items, but applies to building materials specifically. I think it is a very excellent index. I think by considering the All-Commodities Index, Department of Labor, and the Building Materials Index of the Department of Labor, you can get excellent results. This index shows a value of $33,140,000, and on December, 1932, which is our focal date, it was fourth from the highest of all of the categories of the Department of Labor All-Commodities Index numbers.

The Commission in its rating of 31, gave this Index a weight of 2. This index forms part of the All-Commodities Index and was higher at the end of the year 1932. All of these component indexes tend to swing around the All-Commodities Index, because that Index is the average.

Mr. Gretz, as witness for the Company in the 1925 case before the Statutory Court, put in a composite index to corroborate the appraisers of the Company, and his application of that index brought about a figure of $36,106,000 to compare with Mr. Robinson's engineering appraisal of $37,500,000. If I applied the building material index of the Department of Labor in 1923, as I have applied it here, I would have had a value of $35,718,000, which is a difference of 1% from the results given by Mr. Gretz's index. This shows that the Gretz Index and the Building Materials Index compared very well in 1923, but it will [fol. 596] appear later that they do not compare very well in December, 1932. Mr. Gretz's Index, when it comes to these declines in prices, does not go down very rapidly. The comparison between the Building Materials Index and Mr. Gretz's index for the period from 1923 to 1932 is shown in the form of a graph on page 34 of Exhibit D-5. From 1923 to 1929 the trends came together and then they are separated rather widely. In 1930 the separation continued, getting wider, down until 1932. The gross value, as shown by the Company's composite (Gretz) index number, applied to the Court's value in 1923, would have been $52,520,000. The gross value, shown by the Company's Exhibit No. 12 before the Commission was $52,813,000. I show these figures because the Company did not use the Gretz composite index before the Commission. It used one index number for central office equipment and another one for station equipment, and they had office appraisals and

field appraisals, the same as they have submitted to this Court in Exhibit A-31. The composite index of the Company was submitted to the Commission by Mr. Gretz, and I understand Mr. Gretz has testified in this case that it is substantially correct. I do not have a similar comparison between the Company's index and the All-Commodities Index. I know that they do not agree nearly as well, but I do not have the comparison here. Explaining this comparison: Suppose that this Gretz index was up at 110, that it had followed the same slope as the other index, then they would have both been alike. They do not have to tie together. There can be a wide space separating the two [fol. 597] trends, but as long as they trend the same year to year, go up a certain per cent. or down a certain per cent., they are in agreement. The direction is the important thing. You might start out in 1914 with an index and get out of line one year. That would introduce a space between any two indexes every year thereafter, yet as a matter of fact the two indexes might be identical in their subsequent increases or decreases.

My criticism of the Telephone Company construction index (that is, the so-called Gretz index), is very largely that it does not break after 1929, as practically all of the other indexes do. Undoubtedly one of the causes for this is that the Telephone Company's rate of wages has not decreased, but really has increased during the last few years. There is not any reason why a public service corporation which keeps up its rate of payments to labor, should have the value of its property depreciated on the theory that it ought to have cut the price paid to its labor. Whatever the Company pays its employees is not questioned by the Commission, and what it charges to expenses is not questioned, but is fully allowed in its expenses. But the Company today has a very small amount of construction going on, and that work is done at a high cost. As long as we compare actual cost today for the little volume of construction it is doing, which is true of all public utilities, it is relatively high because there is not much construction. As to whether the rate that the Company pays for its construction labor establishes the cost of construction for that utility prop- [fol. 598] erty, to the extent that it enters into the total cost: If that be true we would have the situation that in times of depression the utility values would be high, and in

times when other prices are high, utility values would be low. I think one who has had experience with these cases will know that the utility values do follow the All-Commodity Index, but maybe not in the same degree. From 1920 to 1929 utilities were receiving higher values on their property—they may not follow the Index to the same degree, but they do in principle. Yet the actual cost today for construction for the Telephone Company, for instance, is higher than if there was a larger amount of construction, because of the small volume of construction. So whether or not the small volume of construction will form a basis or criterion for value is a question.

As to whether the price paid for its labor in construction fixes the construction price of labor for that company, it does fix the price where the company is doing large construction work. In answer to the Court's question, if in a concrete case the Telephone Company constructs a building with its own forces and pays them on the uniform scale, and it costs $50,000 more to erect the building by using their own labor wage scale than it would cost a contractor to build the same building, whether it is my contention that the value to the Telephone Company and to the public service is to be fixed by what the lower paid labor is paid or by what it actually cost the Telephone Company by using its own [fol. 599] labor wage scale: As far as value is concerned, the lower labor costs would fix the value, provided the lower labor was not exploited, but was a reasonable market wage. The way value is fixed is not to look for one company's own subjective experience, but the market value of labor as well as the market value of materials.

Q. (Judge Soper:) Following that up in line with Judge Chesnut's suggestion, it is not merely a question of labor, but it is also a question of materials. There is a very special market, it seems to me. At least we are told that in this case, due to the fact that a very great part of the Company's materials are purchased from the Western Electric Company. Now, are we to ignore that fact? Is there any reason to doubt that as a matter of fact, this Company and all the associated companies are better off, and therefore that the public is better off, by reason of the fact that the Western Electric is able to manufacture in huge quantities for the benefit of all these telephone companies and therefore to manufacture more cheaply than would be the case

if they did not have this advantage? Does not that make a special market, a special situation, for this particular utility, so that year in and year out the public is really benefited rather than otherwise?

A. I think the public is probably benefited by the Western Electric. I would not want to see the conditions changed. And yet it is hard for me to believe that values which went [fol. 600] up in 1923 and followed the Commodities Index have not come down today. I am dealing with value.

Q. (Judge Soper:) The Company was not pressing the fact in 1923 that prices went up. Its prices did not go up so fast. Today we are told when everything was booming the Western Electric was still below top. That was not accentuated in 1923, and maybe some mistakes were made. But with the light we have now, is it fair for us to take this swift decline in the last two or three years to the bottom figure, affecting the industry when there is evidence which you do not combat that this particular industry is served by conditions which do not fluctuate so rapidly?

A. Your Honor, I don't accept that. The Western Electric prices have not fluctuated altogether so much but the C. & P. Index conforms very well to the Buildings Material Index for 1923, and in 1923 the Company's values, they claim, were higher than the All Commodities Index, their figure showing higher values.

If you have higher values in 1923, and if you have a level in 1923 and 1929, I do not see where the Western Electric is really serving the Company at lower prices during all this time.

Referring to the Court's question, as to whether I draw the conclusion that the Associated Companies got no benefit [fol. 601] from the fact that there was large quantities of material being manufactured by the Western Electric for all the Associated Companies: There is no real way to compare that, because in the absence of competition it is utterly impossible to say what the price would have been. If you had a lot of competitive companies, you cannot tell what would have been the effect on the price structure. The competition is so small that you really get into the realm of monopoly prices.

I am discussing the Telephone Construction Index, which includes Western Electric prices and all other prices paid by the Company. I make a big distinction between the

Western Electric prices and the C. & P. Index. The C. & P. Index is the one I say goes generally along with the building material index. You will find that the United States Department of Labor Building Materials Index follows the C. & P. Index very well from 1923 to 1929. The slope during the period is the same when I join them at 1923.

On the assumption based on the testimony of Mr. Cox and Mr. Crosland, that the Western Electric prices are monopoly prices, and testifying as to whether or not monopoly prices are regarded as a fair criterion of value: Monopoly prices are usually ignored in comparing values, particularly in index numbers.

Referring to Exhibit A-47, as suggested by the Court, that shows all the other indexes except the Telephone Con-
[fol. 602] struction Index have gone down precipitously from 1929 to 1932, and then they all begin to go up. I think the Telephone Index would go up too.

Q. (Judge Soper:) Perhaps, but what I am suggesting to you is this: You say your view is that we should take, I think, the commodities line, which is the solid black line here, and we take this point which is under 100 and put our valuation there, notwithstanding the fact that we know we are in extraordinary conditions and also notwithstanding the fact that it appears that the return is on the way.

A. Of course, your Honor, that is for extraordinary conditions during an extraordinary depression. The return is here—I hope it is on the way as to industry.

Prices have gone up somewhat but there is no correlation between prices and prosperity. Prices do not have to be high to have prosperity. Only during the War periods and immediately thereafter have we ever had prices above the 1913 level.

Referring to the Court's question whether the practical conclusion to be drawn from the use of my indexes is that when I am trying to find a rate base I have used the lowest point, which already we seem to have left, and taken that as the place for valuing my rate base: The Commission allowed a margin in income of several hundred thousand dollars, and did not take the absolute low figure. It was
[fol. 603] an unusual procedure for the Commission to allow that margin. I do not want to see this Company's property confiscated by any means. I believe it would be a terrible thing if it is confiscated. But it is a strange thing

how public utilities generally have values which exceed costs when commodity prices go up; and I have not seen one single valuation made in this depression in which the values were less than cost, although in some cases the properties were acquired, like the Clark's Ferry Bridge Company in 1926. We go up with them, that is true; we have plenty of evidence to substantiate that. It would be splendid if we could get the Clark's Ferry Case fixed as a basis.

I recall the testimony of Mr. Cox that the Western Electric could put its competitors out of business but does not want to, and there is no question that they could, the competitors being so small and insignificant. The fact that it could do this but does not, has the tendency for the competitors to keep their prices up when they know they will not have interference from the largest manufacturer in the country. In other words, it takes competition out of the market to a large extent.

On page 36 of Exhibit D-5 I applied the Index of Building Materials compiled by the National Association of Purchasing Agents. This index is also unweighted, which ac- [fol. 604] counts for the low figures. Building Materials, as I stated before, did not come down as low as some of the other articles.

On page 38, Exhibit D-5, I have applied the Building Construction Index of the American Appraisal Company. This index applies to buildings except fixtures, plumbing and heating. This index is compiled by the American Appraisal Company, the largest appraisal company in the world, for 4 types of building: brick, brick with wood frame, brick with steel frame, and reinforced concrete. This index is an average of them all, made specifically to apply to buildings, although the American Appraisal Company says that it is a good trend to use but should not be applied specifically. If we apply this index specifically, the American Appraisal Company will go out of business, because it is engaged in the business of appraising properties by the engineering method. I think it has a splendid, well-compiled index.

The application of this Index shows the value of around $32,000,000. While I have used the average index for the four types of building construction, the index in general follows pretty well the index of brick buildings with steel frame. The American Appraisal Company states this, "The index does not recognize arbitrary price concessions,

but reflects normal trend construction cost, with recognition of normal average profit and labor efficiency." On page 39, Exhibit D-5, I show the value of the property de- [fol. 605] termined by applying the American Appraisal Index but going back to 1914 to follow the same method used on page 11 of Exhibit D-5 with the All-Commodities Index, that is, I went back and trended the figures disclosed by my studies on pages 17 and 18 of Exhibit D-4.

On page 41, Exhibit D-5, is a value reached by applying index numbers compiled by the Consolidated Engineering Company in Baltimore, which is the firm of Mr. Cummins, who testified for the Company in this case. This index also applies to building construction and results in a figure of $34,000,000 and was given a weight of 2 by the Commission.

On page 44, Exhibit D-5, I have used the Index of the Turner Construction Company, New York, which publishes an index arrived at from its experience in the Eastern Cities averaged for each of the years 1924 to 1932. This shows a value of $33,000,000, just about the same as that shown by the Building Materials Index. The index numbers relative to building construction seem to follow the building materials index very well.

Page 47, Exhibit D-5, shows a different type of study, being concerned with wage rates. Mr. Gretz put in an exhibit (Exhibit A-46) comparing this study. I know the objection has been made many times that the All-Commodities Index does not include the labor of installation. Consequently I tried to make a study of labor in Baltimore City, finally confining my studies to the building trades. I visited [fol. 606] the offices of some of the largest contractors in the City of Baltimore to get my figures. I got figures from J. Henry Miller, Incorporated; Arundel Corporation; M. A. Long; Morrow Brothers; John E. Marshall, and many others. I talked to all the secretaries of Unions, and to carpenters, laborers and so forth, to work out this study. It is the only index which I have specifically compiled in this case. The rest have been compiled by others. Listed on the left-hand side of page 47 are the various building trades, carpenters, electricians, common laborers, and so forth; the amounts they received per hour are shown for each year, 1923 to the very early part of 1933, probably January and February. During the years 1923 to 1931, I did not take the highest wage which I found, nor in the

year 1933 did I take the lowest. For instance, I found in 1933 carpenters generally were getting 40 cents an hour. I show here 55 cents an hour. From these labor rates I worked up index translators, as shown at the bottom of the page. I show the average index numbers. They involve no weighting. But if you compare the individual index numbers, you will find that all of them show a very substantial decline. These wage rates are the rates per hour of persons working for building contractors. Of course, the employes are not employed steadily. If I tried to get a weekly payroll from those figures, it would be very misleading. In the early part of 1933 the union rates were not observed. Of course, Mr. Cummins told us that on the witness stand. The unions were in very bad shape. The N. R. A. came along and helped them out very considerably; [fol. 607] but in the early part of 1933 there was hardly any such thing as union labor in Baltimore City.

As to whether I made this study for the purpose of determining the absolute amount of cost of actual labor that is in the Telephone Company's plant: I was anxious to ascertain what was the labor trend during this period. I was not trying to find an absolute average hourly rate of wage. And that is what Mr. Gretz apparently thought I was doing. That is wrong; because the average hourly rate would not be anything like I have here. We have too many bricklayers, and so forth. The average contractor in Baltimore employs carpenters, common laborers, a couple of rodmen, a hoisting engineer, and that is about all. The rest of it is special work; so the average here will not be applicable by any means. You would have a very large proportion of common labor in constructing a telephone line. Here again the trend of the curve is the important thing and not the space between the two curves.

Referring to Exhibit A-46, introduced by Mr. Gretz: That comparison is in dollars and is not a comparison of trends at all. The persons employed by the Telephone Company do not get an average wage as high as that paid by the contractors, if we average all those guild trades equally, taking common laborers and bricklayers and so forth. As to whether the market value of labor indicates the value of labor, I do not know what the market value of [fol. 608] telephone labor would be, but for building labor I show the market value of labor here very clearly. As to

why the discrepancy exists between the shape of the two curves for 1929, I think it is because labor generally came down tremendously in 1929, whereas the telephone labor did not come down. I will call attention to one study which will disclose that. From 1929 to 1933 production had fallen off to 64%; the amount paid to labor has fallen off to about 44%, and when you work that out you will find that factory labor costs have decreased 30%.

As to why we are not primarily concerned with the fairness of the wages paid: I want to make myself clear that I am not criticizing what wages the Company pays. All the wage it pays the employes, I have allowed without one question. But when it comes to the construction of a plant, are we going to take as the criterion of the value of the plant, the relatively high wage paid to a very few persons—because if there is no construction going on the average is going up. I don't think that establishes value. If the Company started on a 6 year reproduction program, the average wage would come down tremendously. Unemployment is one of the outstanding disasters of this depression. Persons are working for anything they can get, and if they use just a few persons employed in their construction work, I do not think it is a criterion of value, certainly not in the minds of the public, because everything has gone down in the minds of the public.

[fol. 609] Referring to page 47 of Exhibit D-5, if this Company were going to reconstruct its property in 1929, it would probably be paying 40¢ an hour for common labor, but if it were going to reconstruct the same property in 1933, according to my studies, it would pay 25¢ for common labor. I do not think there is any doubt that the market value of labor is a better criterion of the market value of the labor element on this property, than the telephone wages actually paid by them during this period.

On page 48, Exhibit D-5, I compare my index numbers for building construction labor with studies made by the Engineering News Record, weighting the common labor and skilled labor the same in both cases. I find we come very close to each other, the only difference appearing to be in 1931. Page 48-A consists of a comparison of index numbers of the Telephone Company's wage rates with the trend of wages in Baltimore, both starting in 1923 at 100. It will be noticed that the two index numbers continue along pretty

well in 1927. The Telephone Company wage index goes up sharply after that time. In 1931, when the building trade index goes down, the Company index continues on its way upward.

As to whether the sharp rise in Telephone Company's wage trend was due to premeditation or had any relation [fol. 610] to events other than the normal relations between the public utility and its wage earners: I would not accuse the Telephone Company of bad faith; I think it is due to the small volume of construction, and the Company's practice of retaining the older employees getting a higher rate per hour. As to this particular Company there was a considerable amount of construction going on in the period 1927 to 1930. When I was speaking of the small amount of construction, I had reference to the end of 1932. The trend of Telephone Company's wages goes upward from 1929, through to 1931, but the Company had considerable construction work during that period, during which there was a corresponding increase in wages. I heard Mr. Speer testify that the labor rates used by the Telephone Company in its reproduction study were 1930 rates, and that he did not use the 1932 labor rates because of the higher priced labor.

On page 49, Exhibit D-5, I have applied this trend of wage rates as an index to arrive at a suggested value, on the assumption that the value of the property would trend in accordance with the market value of wages. The result is about $31,000,000. I recall the criticism of the Company that the All-Commodities Index does not reflect installation labor. There is some labor in the All-Commodities Index, to the extent that cost of supplying an article includes labor. In the beginning you have the natural resources, such as mines and forests, and labor is applied to get the finished product.

[fol. 611] I have made a study of the books of the Company to ascertain the proportion of the Company's plant represented by materials and by labor. This is shown on page 51 of Exhibit D-5, and shows the proportions for labor and materials entering into the various property accounts each year from 1924 on. This study relates to the Company's construction and very minor assumptions are made

which I think we can ignore. In 1924, 65% was material and 35% was labor; in 1925, 63% for material, 37% for labor, and so on down the line, and down at the bottom the weighted average is 64.99% for material and 35.01% for labor. Incidentally, the Department of Labor made a study a few years ago, in 1931, comparing the material and labor in buildings, and showed 64% for material and 35.7% for labor, just about the same as I have here for the Telephone Company. I heard it testified that on most of the Company's property the Western Electric performed the installation work, so that it does not appear on the Company's books. I think this study is a fair approximation of the proportions of material and labor that are in this plant, and it is corroborated to some extent by the study of the Department of Labor.

As to whether it is possible to combine some of these commodity indexes with my labor index to get a weighted index which includes labor and also commodities: On page 53 of Exhibit D-5 I have combined my labor index with the Building Materials Index of the United States Department of Labor, in the proportion of labor and material resulting [fol. 612] from my study. This discloses a value of $32,369,000, which I would like to compare with the value shown by the index of the American Appraisal Company of $32,623,000, because that is a building material index and also includes labor. The Turner Construction Company shows a value of $33,153,000, and the United States Department of Labor Building Materials $33,140,000. All of these figures are on the previous pages of this Exhibit D-5.

I also applied the Engineering News Record Index as an index of general construction. That index includes four elements, namely, structual steel, cement, lumber, and common labor. During the "plateau" period of prices the Engineering News Record Index worked out very well, but it is a little too inelastic perhaps for the present day, but it can be used very well. The application of this index gives a value of $35,000,000 and the Commission gave it a weight of 2 in its computation.

The Company accuses me of mixing index numbers in certain cases, and on page 56, Exhibit D-5, I tried to answer the criticism. I made a distribution of property back over the years to 1914. I, first of all, valued that property up to 1923 by the All-Commodities Index, the same as this Court

used. I got a value as of 1923 of that part of the property which was put into service during those years. I trended that value and the value in subsequent years added to the Company's property, by the Engineering News Record Index. That would be a mixing of index numbers, perhaps, [fol. 613] which would give a much lower value, however, than is shown by the Engineering News Record.

Responding to a question from the Court, the figure of total assets of the Company as of December 31, 1923, was $29,000,000, which includes fixed capital and all other assets, such as securities and cash. The District Court, in the 1925 case, increased that figure to $36,000,000, by about 24%. The total assets on December 31, 1932, amounted to $52,000,000, and the Commission reduced that in fixing its value to about $40,000,000, or by about 24%. All of these figures are gross undepreciated amounts. The $7,000,000 added by the Court in 1925 as of 1923 was increase in value of the Company's assets over cost.

Exhibit D-5, page 59, shows the application of the Richey (old) series of index numbers. Dr. Richey, of Worcester Polytechnic Institute, has compiled a composite index number for electric light and power plants, including the generating plant, the poles and wires, etc. My sole reason for putting Dr. Richey's index number in this case is because the Commission was familiar with it. Dr. Richey prepared this index series, and about January 1933, he went back and revised it upward, because he stated he found that his index was not keeping pace with experience. If Dr. Richey or anyone else tries to keep pace with experience with the small volume of construction, it is my opinion they will never reflect the fair value of property, because with the small value of construction, operating costs did not go down [fol. 614] as low as they would go down on a large volume of construction, as I explained earlier. If I had used the New Series, I would have gotten a higher figure. On page 59 I used the Old Series, which shows a value of $35,700,000.

There are several index series compiled by engineers who specialize in testifying for companies. These index numbers are put out as advertisements. These index numbers show a sharp decline. These engineers put out these index numbers for the purpose of getting employment, so we have to be cautious in using a specially compiled index number. That is why I favor particularly the index numbers compiled

by the United States Department of Labor. I think they are free from all subjective or unconscious bias. As to what is the bias which I attribute to specially prepared index series: Because there is no market for these engineers on the public side of the question, there is no employment with public service commissions. The employment is always with the companies. Now it is natural for a man who advertises his work to advertise it to those who are to employ him. If a man put out index numbers showing a very low value, he would never get employment at all. Dr. Richey does not publish his index numbers any longer. He is testifying for the companies. A few months ago he was testifying in a very large case in Illinois.

The Department of Labor indexes are available free of charge to anyone who wants them. They are impartial studies. There is no question but that they represent the best index numbers compiled in this country.

[fol. 615] On page 61, Exhibit D-5, I compare the Richey Old Series, which is the heavy line, the Richey New Series, which is the broken line, and the Interstate Commerce Commission Index, prepared for power distribution systems. The Interstate Commerce Commission compiles many index series, and one of these is for power distribution systems. The Richey Old Series compared very favorably with the Power Distribution System Index, whereas the Richey New Series departs radically in the years of the depression. The Interstate Commerce Commission compiles index numbers which are available to State Commissions and others. These index numbers are not published.

On page 63, Exhibit D-5, I have applied one of the index series compiled by the Interstate Commerce Commission. The Interstate Commerce Commission compiles an index for the several accounts of railroads, one of which is known as Account 26 and includes the telephone and telegraph lines owned by railroads. The Interstate Commerce Commission has been engaged in valuation work since 1914, and it is the largest bureau of valuation in the world. I have used that index in this case, starting with the Court's value in 1923, and I get a net value of $32,024,000. I would like to compare that with several other values. First of all, the values shown on page 8 of Exhibit D-5. In that I derive the value by following exactly the method employed by this Court in 1925. That value was $31,400,000. The value

shown by the use of United States Department of Labor [fol. 616] Building Materials Index is $33,100,000. The value shown by the American Appraisal Company index is $32,600,000. The value shown by the combination of my Labor Index and Building Materials Index is $32,300,000, and by the use of the Turner Index, $33,100,000. They are all substantially close.

This index of the Interstate Commerce Commission has been used by that Commission in some 50 cases. I don't know that a decision has been handed down on the use of these index numbers, because the recapture clause of the Transportation Act was repealed in 1932. To my knowledge, this index has not been used for any telephone case, but was used in arriving at present value of the telephone and telegraph lines of railroads. Now the Telephone and Telegraph Lines Account includes many items in not only poles and wire, but includes batteries, cables, conduits, generators, fuses, reostats, switchboards, testing outfits, and about 12 other items, in other words, Account 26 includes all the telephone apparatus owned by the railroads. I do not make the point that the telephone property of railroads is exactly the same kind of property as that of the Telephone Company. The criticism of this index, speaking frankly, is that the proportions of the various items, central office equipment and poles, and so forth, in this Company's plant, may not be the same as in this index. That applies particularly perhaps to central office equipment. But in view of the fact that this index does concern itself with a great many items of property actually in this plant, I thought it worth while to use it, and I think it is an excellent index. I [fol. 617] have also tested this index to see whether you would get any substantially different results by relating retirements back to 1914, and as shown on page 64 of Exhibit D-5, the value is very close to the one arrived at by starting with 1923.

On page 65, Exhibit D-5, I attempt to compare the valuation in 1923, arrived at by the Telephone Company (or Gretz) index, with the Interstate Commission index, and I find as of that time the Interstate Commerce Commission index would have given substantially the same result. The Interstate Commerce Commission index disclosed a value slightly higher than that as disclosed by the C. & P. index. The difference was less than 1%. In a period of rising

prices, such as obtained in 1923, there is a remarkably close correspondence between the Telephone Company's Composite Index and the I. C. C. Index. I would expect therefore to get a close correspondence when prices go down, knowing as I do that in times of high prices, as disclosed by the All-Commodities Index, all public utility properties are valued at prices higher than the cost of the property.

The Interstate Commerce Commission, before certain recent legislation, was engaged in large valuation projects and spent many millions of dollars in connection with valuation work. They did not rely solely on index numbers, but had appraisals too. The Interstate Commerce Commission applies its index in a different manner from what I have [fol. 618] shown here. The Interstate Commerce Commission has units of property as of a particular date, and these units are valued at the 1914 unit cost; and then those costs are trended down to the particular year by the use of this index number. For example, the Interstate Commerce Commission takes the units of property that existed, say, on December 31, 1932, and values them at the 1914 price level and then trends the 1914 value to 1932 by the use of these index numbers. That Commission uses a different method from either the Company's method or my method. They do not use the same method that the Company followed in the 1923 case to corroborate Mr. Robinson and Mr. Sloan, and yet there is a close correspondence between the result of the two indexes.

On page 67, Exhibit D-5, I arrive at a value by the use of the Western Electric index of telephone apparatus and equipment, as filed in Exhibit A-20, without giving recognition to the increase in prices in 1930 and subsequent thereto. In other words, I take the 1929 price level and let that remain stationary throughout the remaining years. By the use of that index I arrive at a value of $34,567,000. In doing this, I took the index number for 1929 of the Western Electric prices and used that up to 1932.

(Thereupon in answer to questions from the Court it was stated by counsel for the Telephone Company that the 1930 and subsequent increase in Western Electric prices to which [fol. 619] witnesses had referred, applied only to new telephone apparatus and equipment, such as Central Office Equipment, and did not apply to a large amount of material, such as lead covered cables, poles, and general supplies.

Further, in answer to the Court's question as to what proportion of the Company's property the Western Electric furnished, it was stated by Counsel that 25% of the total book cost of the property represented materials furnished by the Western Electric which were subject to the increases in prices; 11% articles manufactured by the Western Electric on which there was no price increase; 16% articles bought by the Western Electric and resold to the Telephone Company; 29% Telephone Company Labor; 4% Western Electric Labor of Installation; and 15% miscellaneous articles bought on the outside, and insurance, taxes, and interest.)

The table on page 67 means that I consider that in 1929 the Company had everything they had in 1932. While the index shown in Exhibit A-20 applies only to new apparatus and equipment, I have applied it to the entire plant. From 1929 on, the cost figures are used for property acquired since that time. Referring to page 67 of Exhibit D-5, for 1929, the cost of net additions amounted to $2,205,000, and the present value in the last column shows the same figure. In other words, in this study the cost of property from 1929 to 1932 is the figure I have used, and I have not increased or decreased those costs. If we eliminate the Western [fol. 620] Electric price increases after 1929 and then take off another 10% of the entire plant in 1932, the result would be a value of $31,000,000. This further reduction would in effect reduce the index number for 1929 from 58.5 as shown on Exhibit A-20, to 51.7.

Page 69, Exhibit D-5, shows a suggestion of value of the Company's property by accounts. I have gone back to 1914 and I have used these methods on different accounts. The method conforms more nearly to the Company's method than any other schedule I have in this exhibit. The first item is land. I value land by the United States Department of Labor All-Commodities Index. I think there is great justification for that. I think land follows that very well. I value buildings by the Interstate Commerce Commission Index for Station and Office Buildings and get $2,517,000. Central Office Telephone Equipment and Other Equipment of Central Offices, I value by the use of Interstate Commerce Commission Telephone Equipment Index, an index for telephones, selectors, and interior office equipment, which is a portion of the same Index for Railroad Account No. 26,

"Telegraph and Telephone Lines", as I have used on page 63 of this Exhibit D-5. The Pole Line Account I valued by the I. C. C. Pole Line Index, which is a composite of one index for the materials part of pole lines and another index [fol. 621] for telephone labor. I combined the two component indexes in the proportions of material and labor which go into the Pole Line Account of the Telephone Company. The Company furnished me with a statement of these proportions of material and labor, the rate being 62% for materials and 38% for labor. I made a further calculation by adding freight and distribution costs of 11.44%, which resulted in a revised ratio of 54% materials, 35% labor, and 11% freight.

For the next item, aerial cable, underground and submarine cable, I used Interstate Commerce Commission Index for "Miscellaneous" telephone property, of which 92.44% is cable, and I used the Company's labor. I divided the material index and labor index of the Interstate Commerce Commission in proportion to the material and labor which go into the Company's construction for this account, namely Material 57.56%, Labor 31%, Freight and Distribution 11.44%. Station Equipment was valued by using the I. C. C. Indexes for Telephone Equipment and for telephone labor, divided also according to the proportions of each in the account. Aerial wire was valued in the same way, using the I. C. C. telephone wire index. The I. C. C. has an index for copper wire and an index for iron wire. The method used was a valuation of the account first as a combination of iron wire and labor, and second, as a combination of copper wire and labor. Mr. Gretz showed that for aerial wire, the material was 70% and labor 30%. After an allowance is made for freight and distribution, the per- [fol. 622] centages are: Materials, 61.99%, Labor, 26.57%, Freight and Distribution, 11.44%. After the account was evaluated, first as iron wire and second as copper wire, percentages were taken of the total of each in the ratio of copper wire, 13.70%, and iron wire 86.30%, as shown by the Company's property accounts.

As to underground conduits, I used the I. C. C.'s index for underground conduits in valuing the underground conduit accounts. For the Rights of Way I used book value, the same as the Company did; for Interest during Construc-

tion, I used book value, and for General Equipment, I used the Company's value.

This method gave a total of $40,900,000, and I deduct the impairment of the property as represented by the depreciation reserve, and get a depreciated value of $32,578,000, which does not include Going Value. Adding thereto the amount of Going Value separately allowed by the Commission, $732,000, gives a figure of $33,300,000, very close to the figure arrived at by the use of the Building Materials Index, the American Appraisal Company Index and several other indices. I would like to call attention to the fact that the Labor Index for telephone construction prepared by the I. C. C. shows a decline of 10% since 1929, that railroad labor in general has had a reduction of 10%. I have used the Index for Freight and Distribution Costs, and given that a relatively high weight, perhaps too high a weight, [fol. 623] but I did that to be conservative, because the Index for Freight and Distribution has not shown such a rapid decline. We all know there was an increase in freight rates; I think it was in the year 1931.

On page 71, Exhibit D-5, I show a computation of values as of December 31, 1933, by the various index numbers I have employed. In the first column I show the values as of December 31, 1932, taken from earlier pages of this exhibit; in the second column I show the percentage increase in prices from December, 1932 to December, 1933; in the third column, I show the value as of December 31, 1933, of the property owned December 31, 1932, by giving effect to the increase in prices; in the fourth column, I add the property put in service during 1933 and deduct the increase in the reserve for depreciation; and in the last column, I get a value as of December 31, 1933. The National Association of Purchasing Agents compiled two indexes which I use, one the Commodities Index, and another the Building Materials Index. Both of those ceased as of the end of 1932. The Purchasing Agents then adopted the McGill index number in place of its own compilation. Dr. Richey's old series index numbers are no longer available. The I. C. C. index is not as of the end of the year, but it is for the entire year, and the index for 1933 was lower than the index for 1932, due undoubtedly to the drop in prices in the first part of 1933. I did not use that lower index.

[fol. 624] I have not deducted the depreciation reserve as such in these computations. I deduct the depreciation reserve trended, but in the study on page 69 I deduct the reserve by deducting 20.46%, which was the relationship of the reserve on the books to the book value of the plant. In some of the other exhibits, for instance, on page 63. I trended the reserve just as the Court trended the reserve in the 1925 case. I think it is much better to deduct the percentage. The percentage in 1932 was 20.46%, and is about 22.9% in 1933.

On page 75, Exhibit D-5, is a series of graphs comparing certain index numbers. This graph is taken from the Commission's Opinion, and is put here to emphasize the real difference between the contestants. The top line represents the C. & P. Telephone Construction (or so-called Gretz) index and other lines represent, for instance, Interstate Commerce Commission's Index for Telegraph and Telephone Lines. There is a line for the average construction trend, being the average of the construction index numbers, and a line for the average of the building materials index numbers. The Commission fair value trend and the Federal Reserve Bank of New York index are likewise shown. Last we have an average commodity trend. I think the real difference between the parties to this case, as far as index numbers are concerned, can be seen at a glance at this chart. The only difference in this chart and the one given in the Commission's Opinion is that the Commission's chart [fol. 625] starts at 1923 and in this chart these indexes are tied together at 1929 equalling 100, but the real difference of course is after 1929.

In Exhibit D-5, in the figures which I have trended, I have included the total cost of the property. That means the inclusion of the overheads. It means acceptance of the Western Electric prices at cost, to the extent that the Company has purchased property from the Western Electric during the depression years at higher prices than prevailed before. I have not changed the cost one cent. The entire cost, whether it is due to Western Electric prices or high labor cost, or what not, has been accepted, and it has been trended.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-6".)

In Exhibit D-6, I have attempted to analyze some of the overheads that I have included in the original cost, and it is intended to have a bearing on going value. In the first schedule I show the overheads applied to the Company's construction for 1932, broken down by months. This schedule was compiled by one of the officials of the Company and given to me.

It is my opinion that we have valued this plant as a going concern. It is likewise my opinion that these overheads, which are very substantially included in the cost of the [fol. 626] property, make up the difference between an unorganized plant and a coordinated plant, so I think that the Going Value which the Commission allowed of $732,000, is only a part of the real Going Value allowed in this case. I think the amounts allowed by trending the full costs are substantial. The point that I make is that we have valued this property as a going concern and included all of the cost of coordinating it and getting it going. Where you have a concern which is constructed piecemeal at high piecemeal cost, and when you have included in the cost part of the president's salary and part of the salaries of all the officers, all the clerks and bookkeeping expenses, all those which go into coordinating the plant, I think you have the value as a going concern. These overheads that I have spoken of appear in the book cost, being charged to buildings, poles and wire, to all plant accounts. If we take for instance Exhibit A-2, Balance Sheet, in such an account as the Central Office Equipment Account, there is included a certain allowance for general office salaries.

The term "Going Value" has not been very well defined for us, unfortunately. It is a very vague thing. It is too frequently confused with good will. Of course, there is no good will in a public utility plant as far as rate base is concerned, and Going Value is not good will. Perhaps we have a little conflict between accounting and engineering valuations. Every cent the Company spends goes either into plant or as an expense. If, when the Company's property is valued by engineers, we are going to take certain items [fol. 627] which were charged to expense and say that belongs in capital, it seems to me that there is nothing for us to do but to make accountancy conform to the law, and take those items out of expenses and put them in property. If this Company's property in going value has increased from

$705,000 in 1914 to $4,500,000 in 1932, that is at the rate of $200,000 a year. It is possible that the expenses are $200,000 too high, unless we have this condition, that we have going value not resulting from any cost which the Company incurs, but from other reasons, such as are frequently cited, for example, good state government, and things of that nature. It is very vague as to its exact meaning.

It is true that I have taken actual cost figures of the property in place, but have not been valuing that property as a pile of bare bones. Illustrating, suppose you had a plant in existence for 25 years, and there was not one cent changed in any labor or material element which went into that plant, you would expect that during that entire 25-year period the value would be the investment. Yet under the theory advanced in this case by the Company, and in other cases, that would not be so. Every three or five years you would have a hypothetical reproduction of the plant; and by reason of this hypothetical reproduction alone you would increase going value tremendously; so that at the end of the 25-year period you would be earning on something which would be substantially higher than the cost. We have a serious conflict between theory and practice.

[fol. 628] I think we have valued this plant as a going concern, and these overheads on page 1 of Exhibit D-6, to the extent that they constitute items or elements of going value, are in addition to the specific allowance which the Commission made for going value. In addition to the overheads, to which I refer as being possibly elements of going concern value, I have also trended engineering, contingencies, legal and administrative expenses, and all that was paid for and capitalized in the way of overheads. Allowance has been made for interest during construction that was actually paid for, and in addition, the amount of $705,000 allowed by the Commission in 1914 for Going Value has been trended to date.

As explained, Sheet 1 of Exhibit D-6 contained a list of the overheads applied to the Company's own construction. When independent contractors do work for the Company, the Company likewise applies its overhead to their cost. For instance, on the outside plant, the overhead in January 1932 to the contractor's bills amounted to 16%, and in December 1932 to 32%. Sheet 2 of Exhibit D-6

shows the Company's overhead which is applied to construction not done by the Company, but done by others. In other words, on all construction work the Company applies overheads. These all appear in the cost and I have valued them. Sheet 3 of Exhibit D-6 is a summary of the overheads applied to the Company's construction, expressed in percentages of labor.

[fol. 629] (Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-7".)

Exhibit D-7 is a study of the depreciation reserve. The percentages shown on page 2 of Exhibit D-7 represent the relationship of the reserve on the dates specified to the cost of the Company's plant. In the early years, the percentage is very low, for instance, in 1910, the reserve amounted to 5.26% of the cost of the plant; in 1911, 10%. On December 31, 1917, it reached 20%, and since that time the reserve has hovered around 20%. It has a remarkable history for being stable, if we ignore the early years. As to those early years: It will be recalled that the Company's property was valued by the Commission as of June 30, 1914. The Commission stated in that case that the amount to be deducted as accrued depreciation, or as impairment to capital, was 20%. It was stated that the Company did not have a reserve of 20% at that time, that it should have, that the Commission would permit the Company to make up that deficit and get a reserve of 20%, and that the reserve should be maintained at 20%. In the 1919 case, the Company itself deducted a reserve of 20%. In 1927, when the Company purchased telephone instruments from the A. T. & T., it purchased those instruments at cost new less 20%. In the 1923 case, the Court trended the reserve. At that time the reserve amounted to 20% of the cost of the plant. After trending, that percentage might change because the additions to the reserve each year did bear the same ratio to the [fol. 630] additions to plant and both additions were trended separately. That is why I think it is better to deduct a percentage, which would be the relationship of the book depreciation reserve and the book cost of the property.

I have no special comment to make on the fact that from 1921, 1922 and 1923, the ratio of the reserve to plant was

higher than 20%, being 23% or 24%, 22%, and 24.58%. The reserve will fluctuate between a few points, depending on retirements and new construction work in any single year. This Company has had a long record of around 20%. When you consider the reserve measures consumed service life—that is the intention of it according to the I. C. C.—and that it remains practically stationary for such a long period of time, I think it is splendid evidence of the actual depreciation in the plant. The ratio of reserve in 1932 was 20.46%, and that is the ratio which I think should be taken generally for the depreciation deduction. In 1933, the ratio was 22.9%. Commenting on that increase, any plant which is not growing, but if anything is declining in the number of customers, would be expected to increase its reserve, if the same rates are applied, because the big factor which brings about retirements of telephone property is inadequacy, namely, growth, and when that growth stops, that factor is removed, so if you still base your annual depreciation expense on that factor of inadequacy, it seems to me you get a very large depreciation reserve. As to whether I would argue from this that the Company's depreciation reserve was too great in 1933, I am not sure [fol. 631] about any one particular year, and it is awfully hard to tie down the depreciation reserve to a specific figure.

The Company charged to depreciation in 1933, $2,200,000. I do not know whether that was too much or not. The one thing I am not testifying to in this case is depreciation expense. I have not analyzed it. My point is that if conditions like we are in today continue, the reserve will grow very large. It will be much more than 20%. I think the history of this Company's depreciation reserve is a magnificent thing. All these years they have had this 20% reserve arrived at by the Commission and the Company endeavoring to find the true facts. After all, the depreciation generally involves considerable estimates. I would like to mention this fact, that in this case the depreciation allowance mentioned by the Commission is based upon value and not upon cost. Answering the Court's question, looking to the general problem in the future of the treatment of the Company, whether a very sharp deduction to the extent of nearly a million dollars in the depreciation reserve is entirely safe, with

regard to the present ratio of 20%: I think as long as the reserve keeps around 20% it will be safe, because many public utilities here do not have reserves that high, for example the Consolidated Gas and Electric Company of Baltimore does not. I could not say from the past history of the Company how long the depreciation reserve would remain approximately 20% if depreciation expense were reduced every year by $800,000.

[fol. 632] As to whether with a reduction of $800,000 in each year's depreciation expense it would take only about 10 years to wipe the reserve out, the question is how much the retirements are going to amount to in the future and come about by inadequacy. With reference to the Commission's depreciation allowance expressed as a percentage of 3.45%, and as to what the percentages in former years have been: The percentages in the past have been higher, between 4½% and a little over 5%. These percentages have been changed on several occasions and there was a change in 1918 for part of that year.

When trends are applied to the depreciation reserve and it is thereby reduced for the purpose of ascertaining a loss in value, it does not thereby take anything from the Company in the way of dollars on the books. When you have reduced the value of the property by trending, the actual book reserve untrended will be a relatively higher percentage of the trended value than it would be of the book cost.

The Company made a reduction in depreciation rates and put them into effect as of April 1, 1933. I have made a study to see what the depreciation reserve might have amounted to if these rates of April 1, 1933 had been applied to the cost of the property in the various years it was put into service, that is, the property which is now in existence. During the past years prior to that time, generally those rates of depreciation were higher. I have [fol. 633] taken the Company's depreciation rates effective April 1, 1933, and have accumulated a depreciation reserve on the basis of those rates. For instance, if I had a building which was 10 years old and that building depreciated at the rate of 2%, 10 times 2 would give me 20; 20% of that building cost would represent the reserve of that building. That is known as the age straight-line method. That would give me a reserve of almost $14,000,-

000, as shown on page 4, Exhibit D-7. In my suggested values I have not used the reserve built up in that way at all. It is put here to show specifically that that particular method was not used in this case.

I have deducted the depreciation reserve to reach fair value in this case, because bearing everything in mind, that is, the assumption that is made to determine depreciation in the past, the history of the depreciation reserve and the Commission's action, it appears to me that the depreciation reserve is the best evidence of the actual depreciation. By actual depreciation, I mean consumed service value and depreciation resulting from all causes. There is much latent depreciation in all physical property, such as the Telephone Company owns, which cannot be perceived.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-8".)

Exhibit D-8 is a study of the earnings of the Western Electric Company. On the first page is a tabulation of the comparison of earnings for 1927 to 1932 inclusive, of cer- [fol. 634] tain leading industrial corporations and of the Western Electric Company. These figures in this tabulation are from the Standard Statistics Publication, which is the same publication referred to by Mr. Crosland when he spoke of his 88 corporations. The earnings of these 442 leading corporations for the years 1927 to 1931, and 399 leading industrial corporations for the year 1932, are compared with the earnings of the Western Electric, treating the Western Electric earnings as a whole. The comparison is made on the basis of the property and investments less depreciation reserve. For the year 1927 the leading corporations had a return of 13.7%, the Western Electric had 29.42%; for the year 1928, the leading corporations had a return of 16.9%, the Western Electric 32.54%; for 1929, the leading corporations had a return of 17.6%, Western Electric 23.87%; for 1930, the leading corporations had a return of 9.9%, Western Electric 12.38%; for 1931, the leading corporations had a return of 4.2%, and the Western Electric had a return of 9.38%; in 1932, the leading corporations had a return of 1.1%, whereas the Western Electric Company had a loss of 5.81%. Comparing the averages, we find the leading corporations had a re-

turn of 10.78%, whereas the Western Electric had a return of 13.29%.

I made the comparison in this Exhibit. Standard Statistics did not furnish the Western Electric figures, but these are my figures computed from the Western Electric annual reports. The percentages are based on property and investments less the depreciation reserve. The figures submitted in this tabulation are not comparable to the figures submitted by witnesses for the Company. The Com- [fol. 635] pany witnesses did not, in the first place, deduct the depreciation reserve. Although one of the Company's witnesses made the computation, deducting the reserve, and showed it made a difference of approximately 1%, that witness also included other assets, such as accounts receivable which are not included in my comparison. The Company's Exhibit A-17, showing in 1931 a return on investment of only 4.2%, is the return on the gross investment without deducting the reserve. Also, my comparison is on total business, not on Bell business alone. The Western Electric manufactures for the Bell Companies and makes purchases for them. Its main business is with the Bell Companies.

In answer to the Court's question as to whether it is not fair to find out what are the results of the Bell business, or supposing that the business were divided into various parts, whether it would not be fair, in the first place, to determine how much they were making in any one department: A lot of assumptions would have to be made and you would have to have a fine cost accounting system to do it.

As to what is my opinion of the method adopted by Mr. Crosland in making his segregation between Bell business and non-Bell business of the Western Electric Company, by the use of a standard cost system: The standard cost system employed by the Western Electric Company will not give the cost of any single item. The Company cannot tell the cost of any single item it manufactures. There is no disagreement there. They made that statement to me [fol. 636] while I was in their offices in New York. The standard cost system is a good cost system if it is revised properly. The very thing which injures a standard cost system is changing price levels; and when we have a changed price level, and particularly when we have a

changed production, and we have no change in the cost system, the cost system becomes obsolete. So I say you would have great difficulty, particularly since 1929, in arriving at the fair profits of the Western Electric Company on its Bell business by the use of the standard cost system. I am not criticizing the standard cost system. I am criticizing the way the system is used by the Western Electric Company. They told me very frankly that with business falling off, that is of minor consideration. I think Mr. Crosland himself said that, that whereas they used to compare their costs every few weeks, they compared them now about every six months, and when I visited the offices of the Western Electric Company in Baltimore, they were very frank in stating "that the standards which we are compiling now are practically not used at all. Every six months or so we go back and make a new analysis." You see what happens with a standard cost system; your costs are based on standards; if you have lead which goes into your production today, into your costs today, 1934, and your price is based on 1929 prices, that is charged in as a cost at 1929 prices. And the difference between the actual cost and the standard cost is known as a shop surplus or shop profit; and it is in allocating shop surplus and shop profit that we have our difficulty. I went to New York to make this study of the Western Electric Company's books. I was introduced to Mr. Gregory, the comptroller of the Western Electric Company; I told them the study I wanted [fol. 637] to make, and to expedite this study they asked me if I would accept a statement which they had prepared. I told them I would. I am familiar with the standard cost system, and, at my request, they brought me the figures of the shop surplus or profits on the materials. And I asked them whether it was fair to state that this is the drop in prices from 1929 to 1932, and they agreed that it was. Material was based either upon 1929 prices or predictions for 1930. If they were based upon predictions for 1930, it seems to me that they should have been lower than the 1929 price level, and that would give even a greater drop than 34%. The anticipation of a greater volume of manufacture to which Mr. Crosland testified, would not mean necessarily a lowering of material prices but they were studying market conditions as of that date and there was a downward trend in the price level.

In this particular Exhibit D-8, I have not attempted to segregate Bell business from non-Bell business. I have taken the Western Electric Company's entire business. In late years, I was informed by Mr. Gregory, the Bell business was about 90% of the Company's total business. If that be true, the remaining 10% is a by-product, because it exists and thrives only because of the 90%. So I think that you can get just as good a picture by studying the Company as a whole, rather than trying to make a segregation on the basis of the standard cost system, which involves very many estimates.

[fol. 638] This comparison on page 7 of Exhibit D-8 is with these other industrial companies as a whole, and shows a comparable basis of return on depreciated cost in each case. I have included the same kind of income in both cases, with one exception. There has been excluded from the Western Electric Company's net profits $9,938,000 special income.

In order to make a comparison between page 1 of Exhibit D-8 and the Company's Exhibit A-17, as suggested by the Court, it would be necessary to put the figures on a comparable basis by computing the percentage on a depreciated cost. It is correct that Mr. Crosland testified that if the values given in Exhibit A-17 had been depreciated, the average return on investment of the Western Electric of 5.8% would be 7.5%. My figure of 13.29% is not quite comparable. I can explain part of these differences. The study made by Mr. Crosland includes other assets of accounts receivable and a lot of other assets. These percentages must be viewed as relative percentages, because when you include these other assets, the percentages drop down. They were not included in the study of Standard Statistics; and I had to make the Western Electric study conform to studies made by Standard Statistics. The result of the study is intended to show that the Western Electric business has been more profitable than that of companies generally. I have exercised great caution to make sure that I have used the same method in computing the Western Electric earnings as the Standard Statistics employed for leading industrial corporations.

[fol. 639] As to why the Western Electric figures were not obtained from the same source, I am not sure that Standard Statistics publishes the Western Electric figures.

I obtained my figures for the 442 leading industrial corporations from Standard Statistics, an organization which publishes a mass of statistical data for investors, banks and insurance companies, and analyzes corporation reports and things of that nature. I examined the computations that were made by Standard Statistics to make sure that I was making the same sort of computations for the Western Electric Company. I took the balance sheet of these 442 corporations, the combined balance sheet, and checked the figures on that balance sheet to this exhibit. I took the similar figures from the Western Electric Company and compared them here. I think this comparison is not to be accepted as an absolute comparison. It is primarily to be used in connection with Mr. Crosland's 88 corporations (Exhibit A-18). I think a better comparison is what the corporation earns on its stock and surplus and investment.

My averages come pretty close to those shown on the Company's Exhibits A-18 and A-19. It is true my method shows over 13%, while the Company's method shows 7.5%. I do not say the Company's method is wrong, but the studies are made on a different basis. I do not say that they have no right to make theirs on that basis. I am not criticizing their figures and I am not criticizing that method. Page 2 of my Exhibit D-8 was put in the case to meet the Company's Exhibit A-18 filed by Mr. Crosland, showing the comparison of the Western Electric with 88 corporations, [fol. 640] and must be considered in connection with Exhibit A-18. As to whether I had some doubts about the propriety of the method followed by Mr. Crosland in segregating Bell and non-Bell business on the basis of standard shop costs: It is my view that where such a large proportion of the Company's business is with the Bell companies, you get better results by comparing the Company as a whole, rather than making assumptions and estimates as to Bell business.

It is possible under two accepted methods to get such a vast difference. I think I can explain that: If you attempt to compare the Ford Motor Company with some other company and you take one comparison, total assets to earnings, and another basis, plant depreciated to earnings, you would get different results entirely, because half of Mr. Ford's assets are in Government securities. In Massachusetts, the statement shows half of his assets are Governmental

securities, which earn a low rate, and as long as you put those in the picture, you get a low rate of return on the assets. As to whether that same kind of situation exists in this case: We have enormous inventories and accounts receivable of the Western Electric Company which may affect the study.

As to whether this study is offered to show as a fact that the Western Electric prices have shown exorbitant or unreasonable profits for the nature of its output: This study [fol. 641] is offered to show that the Western Electric made satisfactory profits during this period of years. As to whether I, as a representative of the Commission, tell this Court that the Western Electric prices are unreasonably high and ought not to be endorsed or approved by the Public Service Commission of Maryland: I do not think that the Western Electric Company prices ought to be endorsed. The only reason why States regulate public utilities is because they are monopolies. It is monopoly prices which we regulate. The Telephone Company has both a horizontal and vertical monopoly. It has all of the telephone companies, most of them in the country, and the Western Electric Company. So you have two monopolies. If you will not accept the monopoly prices for the Telephone Company, why should you accept the monopoly prices for the Western Electric Company?

Q. (Judge Chesnut:) I understand that thoroughly. What I asked you is whether the prices charged by the Western Electric Company are unreasonably high? Now, the Public Service law fundamentally says that rates shall be just and reasonable. Is there not anything unjust or unreasonable, or is there—I want your point of view—in the prices charged by the Western Electric Company for the commodity they furnished which ultimately is used by and paid for by the citizens of Maryland? Is the Western Electric Company gouging the citizens of Maryland or is it conducting an honest business at an honest price? There ought to be some opinion on that point.

A. I think this: I think that the increase in prices of 1930, which went against all of the laws of economics which [fol. 642] we know of, was unjustified. I am not questioning the prices charged during the other years.

We have included in the Commission's valuation the prices charged in those other years. The prices charged in these later years by the Western Electric Company have not actually, in any substantial amount, gone into the Telephone Company. I think there is very little of the central office equipment and articles of that nature that have gone into the Telephone Company's property in recent months. As to whether the 1934 increase is an increase for the future if business continues low in volume: I am not sure just how the Western Electric fixes its prices.

Q. (By Judge Coleman:) Now, might I ask right in that connection, to see if I get your answer, this: Mr. Cox testified substantially as follows—I have this in my notes: "Prices which Graybar gets from its outside sales in competitive market are materially greater than the prices it gets from the associated companies. To none of the competing outside companies, such as Kellogg Company, etc., can the associated companies go and get their material as cheaply as from the Western."

A. That is true.

As to how, in the face of that I can still say that I think the prices cannot be fair: Because these independent sup- [fol. 643] pliers are so small and supply such a small amount of the total Telephone Company property, that the Western Electric Company has a virtual monopoly in that field. This does not mean that we are driven back to measuring whether prices are too high by the ultimate earnings of the Western Electric. If we did that, there would be no depression. If all business corporations could recover their cost today, there would be no depression. Prices have gone so low as to go below cost in many cases. The Western Electric Company cannot possibly make a profit on the volume of business it is doing today, no matter how it increases prices, because its volume is down to 16%. If we take cost as a factor, we would have to increase the Western Electric Company prices many thousand per cent.

As to whether we must not get down to a figure which prevents the Company getting a fair return: There is no way by which the Western Electric can get a fair return these days at any price. They can increase their price 10,000% and I do not think that would give them a fair

return, because they are operating at 16% of capacity. There is not any business.

Q. (Judge Chesnut:) Let me see if I understand the philosophy of that: Is it your thought, Mr. Smith, that the Western Electric Company, having reduced their prices in times of large business volume, because they were making, they thought, an unnecessarily large profit, comes to the time when they have little or LO output and cannot [fol. 644] make profit and they, therefore, increase the price of their commodity, is it your idea that in rate regulation in Maryland it is unreasonable for the public to pay the increased price which the Western Electric Company charges in order to decrease its deficit from operations?

A. Yes sir, Your Honor.

Q. Doesn't that mean then that the Western Electric Company is under an obligation to continue to furnish commodities to the citizens of Maryland at a loss?

A. It is going to do it, it is doing it, and cannot help it. There is nothing in the world that can cure that condition, except that a lot of people put in telephones.

Q. Well, then, the Western Electric Company, according to your idea as to the reasonable prices, must continue without raising its prices to its customers, to run its business at a loss until business itself has changed?

A. Yes, that is the exact condition every other business finds itself in. I will refer you to the automobile business. The prices of automobiles came down just as fast as the prices on things the Western Electric Company sells. A lot of machinery prices came tumbling down. And when the demand fell off, they had to decrease the price because [fol. 645] the demand did fall off. That is a general principle of economics and it is a practical principle. Here we have the demand falling off and the price increases, and, therefore, we are flying in the face of economic principles.

On page 4 of Exhibit D-8, I have made a comparison between the Western Electric Company and some other electrical manufacturing companies listed in Moody's Manual in 1933. Moody's Manual has a section in which are listed corporations supplying or manufacturing different commodities, and on one page it has a list of the electrical manufacturing corporations. I took that list and worked up the information which I have on this sheet. I did not substitute

any other corporations. There were three corporations listed for which information was not obtainable, so I could not give the information for those. Otherwise, this is the list of electrical manufacturers given in Moody's. The Western Electric Company was not in Moody. This is intended to show a comparison of return on capital and surplus for these corporations. It is a comparison of the income available for dividends, in relation to the capital and surplus of the corporation as of the end of the years. These companies are on a comparable basis.

In the tabulation shown at the bottom of the page, I have listed the number of corporations which had returns lower than the Western Electric Company, and the number of corporations which had returns higher than the Western Electric Company. The first line shows that in 1932 the Western Electric Company had a smaller loss than 12 of [fol. 646] the corporations; it had a larger loss than 18 of the corporations. In the year 1931, the Western Electric Company was better off than 22 of the corporations, and not as well off as 10 of the corporations. I have included in this computation two of the competitors of the Western Electric Company. The General Cable Corporation did not have as high a rate of return in any year as did the Western Electric. The Kellogg Switchboard and Supply Company, which is a real competitor of the Western Electric, according to Mr. Cox, had a better return than the Western Electric Company in 1924. The total average of all the other companies was 9.47% as against 9.54% for the Western Electric, after excluding Special Income. They are pretty nearly the same. There is not any material difference, until you compare individual years. The Western Electric Company has a very large plant and the loss it sustained in 1932 has pulled its average down considerably.

I have also made a study of the earnings of the A. T. & T. upon its investment in the Western Electric Company from 1924 to 1932, which appears on page 6 of Exhibit D-8. In the first column are shown dividends paid on common stock, that is, dividends paid by the Western Electric Company; and in the second column is shown investment in the common stock by the A. T. & T. The figures in the second column were given to me by, I believe, Mr. Crunden—if not Mr. Crunden, some one in his organization. The total for all of those years is $142,875,000. The aggre-

gate investment for those years was $826,908,000. To get [fol. 647] this aggregate, I add up the investment for each year. The A. T. & T. owns about 98% of the stock of the Western Electric Company. Accordingly, the A. T. & T. received $140,017,500 of the dividends paid on the common stock by the Western Electric Company. That is at the average yearly rate of 16.93% over that entire period. I wanted to be sure that this dividend was not paid out of surplus accumulated prior to 1923; and the tabulation at the bottom of the sheet shows that it did not reduce the surplus as of that date. The common capital stock and surplus on December 31, 1932, amounted to $172,700,000. The common capital stock and surplus in 1923 amounted to $77,000,000. The increase from 1923 to 1932 was $95,000,000. During that time, there was paid into the Western Electric Company $90,000,000, representing the purchase price of additional stock. Deducting that amount paid in, the increase in the common stock equity is $5,000,000. Then I add that $5,000,000 to the dividends paid, which is equivalent to a return of 17.5% on the investment of the A. T. & T. In connection with the year 1927, you will notice that large dividend of $56,250,000. In 1926, the Western Electric Company transferred to its subsidiary corporation, the Electrical Research Products, Inc., assets of the value of $41,000,000, which included the following items: Investment in the Graybar Company stock, $6,699,000; investment in the Northern Electric Company stock, $1,370,000; investment in the Western Electric Company, Limited, of London, stock $1,000, or a total for those items of $8,070,000; it also transferred marketable securities, consisting of Liberty Bonds and U. S. Treasury Notes, in the amount of [fol. 648] $30,693,000. When the Western Electric Company transferred these assets, it charged the items on its books as an investment in this subsidiary corporation. The subsidiary corporation in 1927, having liquidated some of these items, paid back to the Western Electric Company a dividend of $48,750,000. The Western Electric Company took up that dividend, but, at the same time, it took a loss on its investment in the subsidiary corporation, to the extent of $38,812,000. So the difference between the income it received and the loss it took on its investment was $9,900,000. In other words, the Western Electric Company received a liquidating dividend, which is the figure mentioned in connection with page 2 of this Exhibit.

As to whether Mr. Crosland was correct in stating that the $38,000,000 plus transferred to the Electrical Research Products, Inc., represented earnings from 1881 up to that time on non-Bell business: That could not be so. If a company made earnings in 1881, or any year along that time, wouldn't the earnings appear in its surplus account? How would the earnings go up in 1927? In other words, if the company has earnings in 1924, it has an earning in 1924. If it has earnings in 1881, it has an earning in that year. It would be hard to identify that dividend which I call a liquidating dividend, as coming from any particular source; but it was a dividend paid in 1927. I do not know that Mr. Crosland made such a statement as indicated, but if he did, I do not agree with him.

[fol. 649] Notwithstanding the failure of the Western Electric Company to pay any dividends in 1932, the A. T. & T., over this period of years, has realized on its investment in the Western Electric between 16% and 17%.

The Western Electric Company has no sales expense, and during those years when it was purchasing on a large scale, it could have very efficient operations, because it could have planned production; that is to say, it was notified in advance as to the requirements of the Bell Companies. The sales expense in manufacturing plants, particularly manufacturers of machinery, run very large, very frequently as high as 25%. The studies made or published by the Department of Agriculture show the sales expense runs from 12% to 30%. It is a very large item, and I can testify from my own experience in examining books of corporations that the sale expense of a manufacturer, if he is dealing in a competitive market, is very large.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-9".)

This Exhibit D-9 is a study of suggested allowances for Working Capital. I compute working capital by two methods. According to the first method, I relate working capital to the expenses of the Company. The operating expenses of the Company for the year 1932 were $10,537,000. From this amount I made certain eliminations for the purpose of my study. Donations are eliminated, [fol. 650] because I do not think that is a proper operating expense to charge against the consumers. It is very small.

I eliminate Depreciation Expense, because that is a non-cash expense, it does not involve an outlay of cash, and therefore no working capital is required for that. I eliminate Pension Fund Accruals, because no cash is required, being simply represented by notes given by the Company. I have included the amount of pensions actually paid. I eliminate License Contract Payments, because license contract payments for January, for instance, would be due on the 10th of March. And inasmuch as there is a 25-day lag in collecting revenues, the Company would collect revenues before it would have to make payment. The license payments are the 1.5% which the Telephone Company pays to the A. T. & T. under its license agreement. I eliminated income tax and gross receipts taxes because they are paid the year following the year of collections. I eliminated stock taxes, because they are paid during the year, and the collection of income and gross receipts taxes during the year will more than enable the Company to pay the stock taxes as they fall due. In other words, the income taxes of $401,000 for 1932 will be paid in quarterly instalments in 1933. The gross receipts tax for 1932 will be paid in 1933. The capital stock tax will be paid during the year. The collection on these three items will more than make up the amount which the Company has to pay at any one fixed time.

With the exception of Donations, these items have all been allowed in the computation of the expense, but ex- [fol. 651] cluded for the purposes of this study. I had to take the cash disbursements which were charged against depreciation reserve, because those cash disbursements do not find their way into the expense accounts. The Company has storm damages and things of that nature. It must spend cash for repairs, and this expenditure is a charge against depreciation reserve. Such cash disbursements in 1932 amounted to $369,000. I have included such expenditures in my study because Working Capital must be provided for them. There then remains a balance of expenses, $7,116,000, for which the Company must have some working capital. There is a 25-day lag in the collection of revenues. 25/365 of $7,116,000 is the amount of cash which the Company requires to meet its expenses as they are due, in addition to the amount of $249,000 for materials and supplies. This gives a total for working

capital of $736,000. I did not include the Class C stock in materials and supplies because Class C stock did not appear on the Company's books. I did not know that this stock existed until the testimony was given before the Commission. Incidentally, I think this allowance is liberal, because there is a lag of 45 days in the payment of Western Electric Company's bills, and practically all the materials that the Company buys come from the Western Electric. Even stationery and things of that nature come from the Western Electric.

Next I show the working capital according to what I term the accounting method. It is also the banking method, the old business men's method, or the same as Standard [fol. 652] Statistics classifies as working capital, namely excess of current assets over current liabilities.

As to how much was allowed for Working Capital by the Statutory Court in 1925, it is difficult to compute what was allowed by the Court, because the Court trended total assets and said they included working capital. As to the working capital allowed in 1914, I think it was based on one-eighth of operating expenses plus materials and supplies.

Q. (Judge Soper:) Let us assume that in 1923, the proper amount of working capital was $1,000,000. Now then let us take into consideration that since that time there have been substantial net additions of, say, $23,000,000, to the Company's plant or assets. Does that great increase of property lead you to say that there should or should not be any increase of working capital? Is there any relationship between the two?

A. No relationship at all, your Honor.

There is no relationship because working capital is needed for expenses and is based on expenses. I think that real working capital is the excess of current assets over current liabilities. That is all the Company has. The Company needs working capital, that is cash, materials and supplies, to pay its expense bills as they mature, and to have materials and supplies which they must have on hand to take care of ordinary current work. I do not think the Company has any more than $643,000 of working capital. [fol. 653] The usual rule of working capital for other utilities in Maryland, where bills are not rendered in ad-

vance, is one-eighth of annual operating expense plus materials and supplies, due to the fact that there is a six weeks' lag in the collection of revenues. Where there is only a 25-day lag in the collection of revenues for a large portion of bills, and a collection in advance for a large portion of them, it is proper to make some change in the general rule for utilities of one-eighth of operating expense plus materials and supplies, and it was done by the Commission in this case.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-10.")

In Exhibit D-5, I suggested a number of values for this property, and on page 69 of Exhibit D-5 attempted to break down one of them among the various items of property. The figures in the first column on Exhibit D-10 have been taken from Exhibit D-5, p. 69. In the second column are shown comparable figures taken from the Company's exhibit before the Commission, but substantially the same as appear in Exhibit A-31. The comparison is made as of December 31, 1932. This study shows a difference in physical value of $5,270,000, $1,500,000 of which is due to Western Electric 1930 price increases, as testified to by Mr. Speer. The remaining difference of $3,770,000 I cannot identify. The difference is not large as far as valuations are concerned. I say it is not large because it is usual in valuation cases to find substantial differences. It may be due to labor costs, to overheads, or to the value of the physical plant materials.

[fol. 654] The next item is Interest during Construction, which shows the difference between the actual interest cost on the Company's books and the amount of interest they feel they would have to pay if the property were reproduced. One is an actual figure and the other is a hypothetical figure. The difference is over $2,000,000.

The next item compared is Going Value. I used the figure of $732,000 allowed by the Commission and compared it with the amount shown by Mr. Sloan, and get a difference of $3,768,000. The $732,000 represents the $705,000 allowed in the 1914 case, trended to date by using the Commission's composite index and not by the All-Commodities Index. In the 1923 case, the Court allowed $1,085,000. It is correct to say that the $732,000 is trended from that.

As to working Capital, my figure is taken from Exhibit D-9. The Company figure is shown as $1,700,000, the amount claimed before the Commission. The Company now claims $1,615,000.

(It was explained by counsel for the Company that there was a difference of approximately $200,000 between the figures shown on Exhibit D-10 as being the Company's figures, and the Company's actual figures on Exhibit A-31, the difference being brought about partly as a result of the recomputation of working capital to a later date, partly as a result of the stipulation as to Land and Buildings, and the consequential change in Interest during Construction.)

I have not set forth on this exhibit the book cost of the [fol. 655] Company's property, and I understand that the figures I have used for the Company's Suggested Value is only one of the evidences of value.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-11.")

Exhibit D-11 relates to revenues, expenses and real income. The computation on page 2 shows the revenues and expenses of the Company for the year 1932. These revenues and expenses are not as shown by the books of the Company, but after my several adjustments have been applied. I show the total operating income and then the intrastate portion. The Commission allowed a certain depreciation expense. Mr. Holland testified to a certain depreciation expense and Mr. Pagon testified to a certain depreciation expense, and I show on all three bases, the net income for the intrastate portion. The depreciation expense, shown in the main computation is the expense item computed by Mr. Pagon, $1,167,000. At the bottom of the exhibit I show the final result of using the depreciation expense which the Commission allowed, and also of using the depreciation expense testified to by Mr. Holland, the Chief Engineer of the Commission.

On page 8, I show the operating expenses according to the books of $10,537,000, and add to those operating expenses an income tax adjustment of $188,000 brought about [fol. 656] by reason of the fact that we decreased the depreciation expense, which would increase the income tax. It may increase the income tax, I am not sure of that; it may

not, because the depreciation expense for income tax purposes is not necessarily the same as it is for regulatory purposes; there may be a vast difference. In answer to the question of Counsel for the Company, I say it is possible that if the Company accepts the Commission's depreciation figures, that they would be assessed an additional income tax of $188,000 for that year.

Then I deduct from the expenses, donations, depreciation expense; taxes applicable to the non-operating income; and obtain minimum expenses of $9,337,000. The computation of the depreciation expense is shown on the lower section of the sheets. The amount charged to depreciation and amortization expense accounts is $2,541,000; amount charged to other accounts $70,000; total charged $2,611,000, total allowed, $1,237,000, a difference of $1,374,000. The $188,000 is 13.75% of the difference of $1,374,000 in the depreciation expense, the income tax rate being 13.75% of income.

On page 10 of Exhibit D-11, I begin to show by studies of the purchasing power of income, in other words, the purchasing power of the dollar, and how it has changed during the period as applied to income. In this connection we assume a stable rate base, and show how the income will buy much more that it did in 1923. In order to arrive at that, I first of all have a rate base. On page 10 I show [fol. 657] the value as of 1923 of $29,000,000. I add net additions every year, these additions being taken from reports furnished to the Commission by the Company since the last rate case was decided. These additions represent the cost of net additions made each year, with adjustments to working capital, so that we have a value at the end of the period of $48,000,000, which represents the Court's value in 1923, plus the cost of net additions made after that date. No effect has been given to the decline in prices. I then find the relationship of $29,000,000 in 1923 to the total, and find the relationship with amounts added every year; and I show those percentages in the second column. In other words, I am about to relate income of the Company to property by years. And on page 11 I do that. The income of $4,017,000, as shown on the income statement on page 2, is allocated to 1923, 1924 and 1925 in the first column on page 11, in accordance with the percentages shown on page 10. In other words, 61% of that income was related back to

the value of the property as of 1923. Income, after all, relates to property. That is especially true in the case of public utilities.

I am dividing up the 1932 income in the same proportions as the property was divided up on page 10 of Exhibit D-11, the income being taken from page 2 of the same exhibit. I am computing real income from that income, that is, what the dollars will buy. In other words, the dollar will buy much more today that it did in 1923. 61% of the property was on hand in 1923 and therefore there should be allocated to that 61% of income. In the first column on [fol. 658] page 11, I have $2,453,000, which represents the income proportion to the 1923 base, or 61% of the 1932 income. The translator in the second column is the All- Commodities Index, which shows that at the end of 1932 the dollar of 1923 would buy $1.56 worth of commodities. As to how this computation is related to the problem in this case, assuming that we are interested in what money would buy back in 1923: We assume a stable rate base from 1923 to date, and we are trying to show how the income in the Company has really gone up, because the dollar will buy so much more. It is true that if the Company has been earning, for instance, 7% in the past in years of high prices, and they still earn 7% in years of low prices, that the 7% means more to them now than it did in the previous years. That this has a bearing on the rate of return is what I am trying to show here. But instead of changing the rate base, I am trying to express it in terms of income —how far that will go today. It is true that this income of $2,453,000 in 1923, according to this study, would be real income amounting to $3,845,000, by reason of the change in the price levels of commodities. The $2,453,000 mentioned is that portion of the 1932 income which is attributable to the 1923 rate base, if we buy the 61% of the property in 1923 dollars and get income on it in 1932 dollars. If we get a return on property expressed as 6% for instance, that 6% will give you so many dollars, and those dollars will buy more in 1932 than they would in 1923. If we are thinking of it in terms of 1923 and compare it in terms of 1932, in reality, when the Company gets $2,400,- [fol. 659] 000 in dollars on the 1923 base it is now getting $3,800,000, in butter and eggs, iron and coal, and all the rest of the things that people want to buy. The exhib

(page 11) continues the computation using the National Industrial Conference Board Cost-of-Living Index, and Cost-of-Living Index of the Department of Labor, and the Federal Reserve Bank of New York (Carl Snyder) Index.

In answer to the Court's suggestion, it is true that if the Company had $25,000,000 in 1923 and got 6% on it at that time, and if it still got the same amount in dollars of income at 6% on the same rate base in 1932, that would really be equivalent to 8%, because it is worth that much more in money or in value. I am not applying an inflated income to a depreciated rate base. The rate base is $48,000,000, pretty much the rate base the Company claims in this case. But it is the rate base established by starting out in 1923 and adding the cost of additions each year. Of course it would be very unfair to trend the rate base and also trend the income dollars. We have shown in our study in Exhibit D-5 the trend of the rate base, and in this exhibit we have shown a stable rate base and a trend of income.

I will now turn to page 14 of Exhibit D-11. Pages 12 and 13 are the same as 14 and 15, except that the former refer to 1932 and the latter to 1933. On page 14 I adopt a little different basis. I allocate back to the years the additions [fol. 660] each year, as explained before in connection with pages 17 and 18 of Exhibit D-5. I take the additions each year up to 1923 and trend them up to the 1923 value by the All-Commodities Index, following the method adopted by this Court. And after that time I add the additions each year to the property. In other words, I tried to get the property which is still in service, which was added in each of these years. This translates the income into real income. It shows a real income, according to the All-Commodities Index, of $4,211,981; according to the Federal Reserve Bank of New York, $4,043,313; according to the National Industrial Conference Board, at the cost of living, $4,106,754, and the U. S. Bureau of Labor, cost of living, $3,997,920. In this case I have an untrended rate base as I had in the study for 1932. I am trending the income figures for each of the years by allocating portions of that income to each of the years.

The general purpose of the exhibit is not to show that the Company has received more than a fair return on fair value in past years. It is to show that if the Company gets a 6%

return today on the valuation fixed by this Court in 1923, plus the cost of all property added after that time, the 6% in actual dollars is a great deal more than it would have been in 1923 or 1924.

(Hereupon counsel for defendants read to the witness from the testimony of Dr. King, one of the witnesses for the plaintiff in this case, as follows):

"To determine the change in price levels in my theory, it would be necessary to find out what the dollar would buy in terms of the investment at different times, so that the [fol. 661] dollars of one year could be added to the dollars of another year; that is to say, $1,000 invested in 1913, $1,000 in 1920, $1,000 in 1921, and $1,000 in 1932, or $4,000 invested all together, gives a total which is much like a total of apples and pears and potatoes and somewhat difficult to utilize."

Q. (Mr. Cleveland:) Do I understand that this elaborate method you have used is to make those dollars of different years comparable, to show what the income of all of them would be if invested at different times in terms of 1932 dollars?

A. That is exactly so.

Judge Soper: Certainly the exact percentages per year could not be arrived at to make the calculations.

I think it is true that this exhibit shows also that even though wheat and pears and foodstuffs and things of that kind have not gone into these physical properties we are valuing, nevertheless this income is utilized for just such purposes, and it is proper to state them in terms of such [fol. 662] commodities. It is especially true when we consider the several indexes we have used. I call attention to the Federal Reserve Board Index, which is a very general index, covering security prices, land values, labor.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-12".)

This Exhibit D-12 consists of some studies bearing upon the rate of return. Bearing on the question of cost of money of this Company, it would be interesting to see what the cost of money was to various public utilities during the year 1933. The cost of bond money would have some bear-

ing on that. I have here a study of bonds issued in the first three months of 1933. March and April of that year contain some dark days in the country's finances. The figures on the first four pages show the securities issued, the amount of the issue and the yield per cent. I would like to call attention on the first page to the Consolidated Gas Electric Light and Power Company of Baltimore, an issue of $5,000,000 of bonds, which yielded 4.12%, the lowest yield of any public utiltiy bonds ever issued by anybody, even the Consolidated Company itself.

As to whether this was largely exchanged with holders of the existing issue; it was put on the market. On page 5 of Exhibit D-12, I have shown the average yield as 5.61%. These bond issues were not selected. I simply took all that I could find, all that were reported in the Annalist during [fol. 663] this period, that is to say, from July 1, 1932, to about the first three months in 1933.

Pages 7 to 15 inclusive, of Exhibit D-12 contain a study of certain corporations listed on the Stock Exchange in New York as to the results of operations for the year 1932. During the early months of 1933 we studied all of the reports we could get of corporations listed on the New York Stock Exchange, to find out what they were doing. We did not weed out any, nor did we substitute any; we took every one we could get with the results shown in this study. This study does not include all the corporations listed on the New York Stock Exchange, but it gives a very good view of the total corporations. I list the corporations here, first, those showing losses and then those showing 1% return, and then those showing 2% return, and so forth. The data for this study I got largely from Moody's Manual. On page 13 I have summarized these studies. There were 296 corporations but 157 or 53% suffered losses. 73% made a return of less than 6%. As to what corporations made more than 20% on plant and inventories, these are shown on page 12. Among these corporations are a lot of tobacco corporations and some corporations with patents or patent formula like the Lambert Company and the Cream of Wheat Corporation. These figures are all for the year 1932. On pages 14 and 15 of Exhibit D-12 is a study of railroad corporations on the same basis. Railroads were notoriously in bad shape. There was only one which I could find in [fol. 664] the early months of 1933 which had a return of

more than 6% in 1932. That was the Chesapeake and Ohio Railroad Company. As to whether the risks and uncertainties of railroad companies are rather large, they were not considered such bad risks a few years ago.

Page 17 of Exhibit D-12, consisting of a photostat of a printed sheet, is a study made by the National City Bank, published in their bulletin called "Economic Conditions, Government Finances and United States Securities". It shows the returns by industries. Referring to the last two columns on that page, "Per cent. return in 1931 and 1932": In 1931 there was a return of 3.3%. In 1932 the industries listed here suffered a net loss.

Page 18, Exhibit D-12, is a study taken from "Standard Trade and Securities", a publication of Standard Statistics Service. This study shows the trend of corporate earnings by industries for the years 1927 to 1932. Referring to the last four columns on the page: In the column of "Relatives", 1929, is taken as 100, and the other columns show the figures in earnings from 1929. For the "Total Industrials", the earnings for 1929 were taken as 100, and in 1930, had dropped to 60, in 1931, to 28, and in 1932 to 2, a drop of 98% from 1929. Comparing the Electric Light and Power utilities, with 1929 as 100, 1930 was 100, 1931 was 94, and 1932 was 76. Comparing Telephone and Telegraph utilities, with 1929 at 100, 1930 was 96, 1931 was 93, and 1932 was 73. The Telephone Company comes in that [fol. 665] group, and the index numbers for the earnings of the Telephone Company, with 1929 at 100, show 1930 at 100.5, 1931 at 114, and 1932 at 96. Studies for 1933 are not yet available, as the annual report to stockholders only started going out a few weeks ago. The figures for the Telephone Company are taken from the annual reports to the Commission. As to what figures enter into the percentage ratio, the ratio is simply a ratio of net income not related to anything else. The amount of net income is an absolute figure, each Company's own net income for 1929 being assumed to be 100. This study means that in 1932, the net revenues of the Telephone Company were only 4% less than in 1929. Referring to the "Traction Bus and Motor Truck" utilities, these show a very large loss in 1932 which is notorious. According to this sheet there are 15 of these telephone and telegraph companies, but no separation is made between telephone and telegraph companies.

Page 19, Exhibit D-12, is a study made of net earnings

by Moody and the study is reported in Moody's Manual of Industrials, page A-101, the companies being listed by industries. I do not need to go into detail. Plenty of studies are available and they all tell the same story. There has been a tremendous falling off in returns of all businesses, and a business which can earn its interest these days is indeed lucky.

The item of "Telephone Utilities" on page 18 of Exhibit D-12 refers to the Bell system. I don't think there is any [fol. 666] doubt the local Company is in better shape as far as keeping up revenues, than Bell Companies generally. It is fair to say that in Maryland the revenues of the Telephone Company increased up to and including 1931, whereas in the country generally they began to fall off in 1929. It is well known that this Company has been growing quite a while up until 1932; it is well known by the Commission, and the Company's officials were all very well satisfied with the progress that the Company was making as compared with other Bell Companies.

On page 20, Exhibit D-12, is a summary of a study made by the Department of Commerce pursuant to Senate Resolution No. 220 of 72nd Congress. That Resolution wanted to know something about the income produced by industry, and in the study are the industries they have listed, Agricultural, Mining, Electric Light Power and Gas, Manufacturing, and so forth. Even governments are included; the income of governments has increased somewhat. Referring to the last four columns, 1929 being taken as 100, the income of 1930 dropped to 84.9; in 1931 to 65.8; in 1932 to 46.2, a decrease of 54% from 1929. The decrease for utilities like Electric Light Power and Gas Companies was from 100 to 74.3. Page 22, Exhibit D-12, shows a study made by Moody of the market value of stocks listed on the New York Stock Exchange. On Page 24, Exhibit D-12, is shown a study of the per cent return earned by all the Bell Companies for [fol. 667] 1932, on plant and equipment in the next to last column (#5) and in the last column (#6) on plant and equipment less the reserve for depreciation. These figures were all taken from Moody's Manual, including the plaintiff Company, The Chesapeake and Potomac Telephone Company of Baltimore City, shown as the last company listed on the sheet. It stands second of all those companies on the per cent. return on depreciated plant and equipment,

the Cincinnati Suburban Bell Telephone Company, in which the A. T. & T. owns only 29% of the stock, standing ahead of it.

In column #5, the Cincinnati and Suburban ranks first, Diamond State ranks second, and this Telephone Company third. In column #6 we find Cincinnati and Suburban ranks first and this Telephone Company, The C. & P. of Baltimore, ranks second. Those figures were taken from Moody and the items of expenses allowed in addition to operating expense were telephone office rents, rent for conduits, instrument and equipment rents, miscellaneous rents, amortization of landed capital, and other deductions. The net income is the net operating income on a total Company basis.

I do not know whether the figures in the operating income for 1932 of any of these companies involve moneys impounded as a result of rate reduction litigation. The figure for this Telephone Company employs the actual figure which the Company included for depreciation expense for 1932. If the Commission's figure had been used, it would [fol. 668] have made an increase in the percentage. I might state that studies I have made indicate that most Bell Companies reduced their depreciation expense, either in 1932 or 1933. There was quite generally a reduction in the depreciation expense.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-13".)

This Exhibit D-13 is a chart of certain graphs of building construction indexes of the American Appraisal Com- . The four lines at the top of the graph for the years to 1932 represent trends of building construction costs, as compiled by the American Appraisal Company. The heavy black line at the bottom of the graph is the index number of the United States Department of Labor for Building Materials. I have averaged the construction index numbers of the American Appraisal Company and have compared them with the Building Materials Index. The point I want to bring out here is that the fact that there is a space between the two lines does not make any difference. As a matter of fact, the Building Materials Index, which is low on the scale, gives a slightly higher value than the values shown by the American Appraisal Index. The space

between the two lines does not make any difference at all. It is the comparison of the trend of one year with another year.

As to what would be the comparative figures for the amount of money invested in the plant of the Western Elec- [fol. 669] tric Company and in the plant of the Kellogg Company: The Kellogg Company has a capital of about $5,000,000 and property less depreciation reserve of about $1,500,000. The Western Electric Company has capital and surplus of $172,000,000, and its gross investment is $161,000,000. I forget the amount in the depreciation reserve. As a matter of fact, I could not identify some of the competitors, because they are not listed in Moody's.

In response to the request of the Court, I have prepared a statement showing the Company's estimate of revenues and expense for 1934, after adjustments by me of depreciation expense and income tax expense.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-14".)

I think D-14 is self-explanatory. I took the Company's forecast for 1934 and changed the depreciation expense so as to compute the depreciation expense as allowed by the Commission, and I adjusted the income tax expense accordingly. I show at the bottom of the exhibit the net operating income, if we would give effect to Mr. Holland's depreciation expense computations and to Mr. Pagon's depreciation expense computations respectively.

As to what is my understanding of the method by which [fol. 670] the Telephone Company arrives at the amount for depreciation expense: The Company's method is very elaborate. The Company studies the service life of its property based on past experience, the studies being by separate classes of property, and the Company has a factor for growth. Then it arrives at depreciation expense based on those studies. In the case of certain items, for example the building at 5 Light Street, the service life is based on the Company's judgment as to when that building will become inadequate. A few years ago it thought the building and the exchanges therein would become inadequate, say, in 1940. Then they moved that date up to 1942. They have moved it up again, and I don't know the date that they plan today to abandon the building, but it is based on the growth

of the Company's business. They arrive at their figures by an estimated percentage on each class of property and reach the final amount of expense as shown in the annual costs. As to whether there is any particular rule when an unusual amount of plant actually goes out of service, or in other words does that affect the annual expense: That only affects the reserve, retirements being charged against the reserve. It does not affect the amount of the percentages representing annual depreciation expense.

As to whether the question of depreciation expense is a subject of investigation by the Commission from time to time, or only comes up during a rate investigation such as the present case: It is one of my duties to study the an- [fol. 671] nual reports of companies and frequently we have conferences with company officials in connection with depreciation expense charges. We have never had a conference with the Telephone Company until about the time this case started, but we have looked over the annual reports and have had frequent discussions as to annual depreciation deductions. We know year by year the condition of the reserve, we watch that very closely. It is my function to study and make certain checks of the annual reports, which are very elaborate and in great detail.

Q. (By Judge Chesnut:) There is a question I wish to ask of somebody, I am not sure whether it is best to be asked of Mr. Smith, Mr. Pagon or Mr. Holland, but it is this: If the Court should adopt the present method of the Commission by accumulating proper annual depreciation expense on the basis of a value as now fixed by the Commission which is very much less than cost, and the result is that depreciation expense which goes, of course, to increase depreciation reserve from year to year, is over a period of several years at a much smaller figure than it has been in the past, and five years we will say from now, if the value of the Company's property, measured and interpreted in terms of the dollars of that day, is very much more than the Commission interprets today, there will then have accumulated a considerable shortage in the depreciation reserve, and the Commission dealing with this Company as far back as 1912, I think, certainly in 1914, greatly emphasized the importance of there being carried at least a 20% depreciation reserve.

[fol. 672] That is a long question, and to repeat it, it is substantially this, if you make a very substantial reduction of nearly a million dollars between what has been allowed in the past for depreciation expense, and which is now suggested be a sufficient allowance, will that run into future difficulties?

A. Yes, your Honor, that follows automatically from the decision of the Supreme Court in the United Railways case.

When you base depreciation on value and the value is low, the Company will not recover the cost of the property, whereas if you base the depreciation expense on value and value it higher than cost, they will recover more than cost. That is one of the anomalous circumstances which flow from that decision. As to whether some of this deficit, if there is to be one, could be made up automatically by increasing the depreciation expense in the future when the value of the property increases: The expense would automatically increase then. That is the point I tried to make. When the values are low, the Company would get a depreciation expense which would return less than cost. When values are higher, the depreciation expense would return more than the cost of the property. As to whether I mean that the adjustment would be automatic, I mean you would have to have a valuation case, some formal proceeding. I do not mean that the rates would be fixed automatically.

[fol. 673] Supposing this Court should fix some figure in this case, as to what control that would have upon future depreciation expense before the next rate case: The amounts would be the same proportion of the property as fixed by this Court until we have another investigation. Of course, the Company could come to the Commission and request that the depreciation expense be increased because of changed conditions. That would be a formal proceeding. The Commission's allowance is 3.45% of the total plant. If that finding is affirmed, the result would be to standardize that as their regular annual percentage for depreciation until conditions changed and the Company came in to the Commission and asked for an increase. The percentage would be standard but it would be calculated each year on the figure established as the value plus the additions.

We have the reverse of that situation in the United Railways case, in which that Company claimed an allowance

for depreciation, based upon value. At the time the case went to the Supreme Court value was much higher than cost, and the Supreme Court said the Company's contention was correct, and the United Railways was given a depreciation on value higher than cost.

In answer to the Court's question, when the rate heretofore of from 4½% to something over 5% has produced a reserve which in m opinion is about right—as to how I expect to maintain the depreciation reserve at 20% if the rate is cut to 3.45%: It is because conditions have changed [fol. 674] so much that the property will not be abandoned as rapidly. The factor of growth has been a big factor in causing retirements of the property. For example, in the case of the building at 5 Light Street, if conditions which existed about 1929 had continued, that building would have been abandoned, if not by this time, certainly within the next couple of years. Because the Company did not grow, the life of that building has been postponed. There is no definite telling when it would go out of business. As long as you have a plant not only not growing, but the number of subscribers dropping off somewhat in the last couple of years, the factor of inadequacy would seem to be minimized, if not out of the picture entirely. The Commission has taken two steps in reducing the depreciation expense. They have first reduced the percentage, based on the considerations which I have just mentioned, and second, they have applied the reduced percentage to reduced value.

As to whether there has been any ruling by the Commission at any time after the reserve had got up to 20%, that the 6% depreciation expense which had been allowed in Case 690, was reduced as a rate: The depreciation rates have been changed many times, not by the Commission but the Commission was watching the reserve. The Commission did not have any part in reducing the depreciation rates on April 1, 1933.

(Thereupon there were offered in evidence by the defendants the following exhibits:

[fol. 675] Opinion and order of the Public Service Commission of Maryland, dated March 8, 1916, in Case 690, which was marked "Defendants' Exhibit D-15."

Opinion and order of the Public Service Commission of Maryland, dated August 18, 1920, in Case 1709, together

with subsequent orders in the same case, which were marked "Defendants' Exhibit D-16."

License Agreement, dated November 17, 1930, between the American Telephone and Telegraph Company and The Chesapeake and Potomac Telephone Company of Baltimore City, which was marked "Defendants' Exhibit D-17."

At the request of Counsel for the Commission, it was stated by Counsel for the Telephone Company that the only change which had been made in the agreement was the temporary reduction from 2½% to 1%½ of the gross revenues as the license payments under the agreement, such change being for the purpose of continuing in effect after the date of the agreement, a temporary reduction made prior to date of the agreement.)

[fol. 676] Cross-examination:

This Telephone Company has not, in the past, when prices were higher than cost, based its depreciation allowances or gotten the benefit of depreciation allowances based on the higher value, as the United Railways has been doing since its case in the Supreme Court. It is true to a certain extent, that as long as the present value as determined by the Commission stays below cost, the reserve will be constantly shrinking and it will be working against the Company, and any compensating process will only become effective when values rise above cost. The present situation is that the Company's reserve in dollars expressed as a relationship of the Commission's fair value, is much higher than 20%. It would take some years before the reserve would be reduced to 20% of the fair value, but, if conditions remain as they are today for any length of time, the reserve undoubtedly will drop below 20% of the cost. It would be necessary to reach a plane where present value would be greater than cost before any countervailing or compensatory process would set in.

I did not make the statement that a rise in the relative size of the depreciation reserve above what it had been is something that is normal and is to be expected when the Company becomes more static, and when the turnover is less quick, without its reflecting on the adequacy or inadequacy of the allowance. What I did say, was that the Commission and its staff kept a close eye on the depreciation

reserve, and that this reduction in depreciation rates was made to keep the reserve from growing unduly high.

[fol. 677] Q. Let me express it in this way, that one of the consequences of either a slowing up in growth or a cessation in growth on the part of a Company like this, would be that the depreciation allowances, even though not excessive, would tend to make the reserve a larger percentage than it was before, upon the same theory upon which if a life insurance company would stop taking in new business, its amount of reserve on the policies remaining would naturally go up?

A. Do you mean to state by that if the expenses were properly computed on the basis of present conditions, the reserve would increase?

Q. In a time of diminution of normal growth or stoppage of growth?

A. It might in a long period of time. If you have a temporary cessation of growth it is not likely to affect it substantially at all; it might in a degree but if you assume a stationary plant, in 50 years the reserve would probably go beyond 20%.

It is true that the force operates immediately as the average property is becoming older. The depreciation reserve, in order to be adequate, ought to correspond approximately to the averaged expired or consumed service life of the articles in use. As to whether it is true that, when growth ceases for a time, the per cent. ratio of the reserve will rise: I say that when you get a stable plant over a long period of years, with retirements and additions coming along gradually, you would have the condition in which the per cent. ratio of the reserve will rise, but in a few years you may [fol. 678] not have it at all. The reserve may go higher or it may go much lower. If one large piece of property is retired, that would dip into the reserve and send it much lower, so that statement cannot be made on the basis of a comparatively few years.

I did not express a preference for cost as a basis for rate determinations. There are many reasons why we should adopt that method find present fair value. In theory, it is very sound. In practice, it is most difficult. Certainly it would be the easiest way to regulate rates that I know of, but as far as having a real preference, if you asked me to-

day whether I think we should adopt as our law that cost should be the basis for fair value, I would have to think a great deal and attach many conditions to it, but there is no question that the cost basis would facilitate rate making, and it would be a very easy matter. The cost basis would facilitate rate regulation very much, because assuming the bookkeeping to be honest, all the Commission would have to do would be to fix the rate of return. As to whether I said that the next easiest or next best method was that of applying general index numbers: I am not sure that I said that was the next easiest method. I said the index method was an easy method. I would not like to classify it as the easier or the easiest. Compared to the engineering valuation, which costs a lot of money and takes a lot of time, the index method is an easy one.

As to whether I know how many cases other than the 1925 Telephone case and the present case before the Commission, where Commissions or Courts have adopted the simple method of applying general indexes to costs over a period to determine present value: I think the Ohio Com- [fol. 679] mission recently used a similar method. The Statutory Court in Georgia, in refusing a temporary restraining order, took notice that the All-Commodity Index showed a tremendous decline. The company's value, the Court said, could not be as much as cost. But I do not know of any case where it has been worked out in detail like it has been here. In other words, I know of cases where the Court has looked at the general commodity index to strengthen its own judicial notice of the fact whether prices had gone down or up generally. As to whether I know of any cases where Courts or Commissions have undertaken to compute the present value of specific property in a rate-making case, by applying general indices to that property: The Ohio Commission did that recently in the Ohio Bell Telephone case, where the Commission used a trend method based upon various index numbers. They cited the C. & P. Index, the Telephone Company's own construction index, which was submitted to the Court in 1925 and then brought up to 1932, and they also cited the Maryland Commission index.

As to whether the Ohio Commission used a table like that offered by Mr. Gretz, based on the company's own experience: The Ohio Commission did not go into the com-

pany's experience in detail, the information was not before the Commission. They used other indices. I think the Engineering News-Record Index. As to whether I mean they scrambled them together and got a compound index or they said they took them all into consideration: They had several index series and they said they trended the value down to what they found it to be in previous years, say from 1924 or 1925 to 1931 or 1932. As to whether they did this by a calculation based on general index numbers: They did not take the All-Commodities Index and do it the way we have done here.

[fol. 680] Referring to Exhibit D-3, this was filed to show that valuations made by engineers are subject to the greatest variance. As to the rate of return allowed in some of the cases, the Commission during the period 1921 to 1929 allowed a return of not less than 7% and not more than 8%.

Referring to page 17 of Exhibit D-4, I show a statement of capital invested each year in each account for the purpose of furnishing a basis for my subsequent calculations. The table is made on the assumption that the oldest item always goes out first. For example, for station apparatus, I start with the Company's balance in 1932 and then, after going back five years, station apparatus has been exhausted It is correct that on this assumption, the Company now would have no station apparatus older than five years. On this method the Company would have plant in several of the other accounts of age not more than from 5 to 7 years.

I did not furnish the table of the actual experience of the Company as to depreciation rates on page 48 of the Commission's Opinion. It was a computation made by the Commission. Taking station apparatus for example, the service life indicated is an average life and not total life. I am not responsible and do not vouch for the column on page 48 marked "Company Experience." The percentage there shown is not expressed as "life" but as the reciprocal of the life. It is true that the Company's experience on buildings indicated in that table would be over 100 years' life, and the Company's experience of central office equipment something like 30 or 40 years. It is correct that according to my table, central office equipment dies out in 1919, which [fol. 681] would show a life of the oldest items of the difference between 1919 and 1932, or 13 years.

Of course, the central office equipment being used, no one can tell exactly when it is going out of service. I don't know where the Commission gets its experience. You could not compare these two, because the Commission was dealing with a lot of central office equipment back in the years when the Company did not have a great deal of equipment. It is correct that the Commission was dealing with central office equipment on hand December 31, 1932, and so was I, but I do not see the connection between the two. The Commission has given consideration to all the central office equipment. The Commission had this information. Prior to the time this investigation started, the Commission stated to the Company that they wanted to discuss depreciation expense because the I. C. C. was making a study of depreciation expense and the Commission was supposed to make recommendations to the I. C. C. All the studies the Company presented to this Court and a great deal more detail was presented to the Commission before the case started. Also the Commission had the Company's exhibits. So the Commission was in possession of a great deal of information. I think practically all the information the Company had. I did not furnish the figures for Company experience appearing on page 48 of the Commission's opinion. I do not know anything about them, nor what the Commission used. The Commission made the estimates. I do not know whether these figures reflect the Company's experience. I do not know who prepared the table but it was done by the Commissioners. So far as I know the life experience column is not based on my auditing or my exhibits.

The table on pages 17 and 18 of Exhibit D-4 does not at- [fol. 682] tempt to show the service life of any of this equipment. You could not get any information from that exhibit in connection with service lives. The study simply shows the age of the property on hand. In some details I know this exhibit is not 100% correct. I know to the extent it errs, there is a compensatory error, because if you take such a thing as station equipment and say that was not exhausted in 1928 and goes back to 1920, 1919 and 1918, we are going to reduce it by much greater percentage and get a much lower value. The Company had furnished me with a statement showing the cost of land and buildings and the dates when they were put into service. In order to check

my study, I trended the value of land and building, from the years they were put in service to 1932, and obtained a result within, say, 4/1000 of 1% of my study.

With reference to Exhibit D-5, page 2, the All-Commodities Index does involve an entire regrouping of commodities as it is carried back into the past, and the further back it goes the less accurate it is. People were buying some different things in 1850 than they are buying now. My curve stops at 1932 when the average for the year was at 65. The low point in the All-Commodities curve was reached in February, 1933, and was 59.8. I think by the end of 1933 it was 70.8, and it has been about 72 since. 1926 is taken as 100. As to whether the clipping from the newspaper showing the wholesale commodity prices as given out by the Bureau of Labor Statistics for January and February, 1934, had risen to 73.6, is correct: I do not know, that was probably a weekly figure and I cannot check weekly figures. It is correct that monthly figure for January, 1934, was 72.3. [fol. 683] It is correct that referring to the index numbers classified by groups on page 4 of Exhibit D-5, the classification of raw materials had gone down most; the semi-manufactured articles much less, and what they call finished goods, still less. Raw materials have gone down very much more in December, 1933, than finished goods. As to the figures for February, 1934, being raw materials 66, semi-manufactured articles 74.8, finished products 77: It may be true that all through the slump raw materials went down very much more than semimanufactured articles, and that fully manufactured articles went down still less. To give a complete answer to the question, you would have to study raw materials back in 1926. I am not prepared to qualify or contradict the statement as to the relative reduction. It is correct that on the date as of which the rate base was selected, raw materials had gone down very much more than finished goods.

Referring to the testimony of one of the Company's witnesses, when he produced two or three specimens of telephone relays, I do not know what the raw materials in that manufactured article cost. I would not like to say that the raw materials in that manufactured article would be insignificant as part of the price. They would be very small, but not insignificant.

Referring to page 47 of Exhibit D-5, this is the index number applicable to wage rates paid in Baltimore which I constructed and used in later calculations. I got the data for that table by examining the books and analyzing the pay rolls of building contractors and people in that line of business. The figures for 1933 do not represent the average for 1933 but are for the months of January and February, [fol. 684] 1933, which period I described as the darkest hour before dawn in the commodity index. There has been some increase in labor rates since that time, particularly in the lower classes of labor. However, I still think that factory labor is down about 30%. I would not like to say that the first two months of 1933 was the lowest point of the whole slump. The lowest point was reached later on. So far as concerns the general commodity index, it is true that it was the lowest point, but in labor there was a decline until the N. R. A. codes became effective in the summer of 1933 when labor rates began to be increased. As to whether the rates for common labor have been increased above 25 cents by N. R. A., common labor is still 25 cents in a great many places. As to whether the standard has been raised, I do not know that there has been any standard. I have not been able to make a study of labor rates today. In this same table (Exhibit D-5, page 47) the average is a simple and not a weighted average. As to whether this study obtained by inquiring around is at best a limited experience: This is an excellent basis for building trades. I am not dealing with exact amounts, but individual figures. You will find that they show a trend upward and a very sharp trend downward in 1932 and 1933.

As to whether I said that I used the Richey (old series) Index, which is less favorable to the Company in the present case, so far as they are affected by a general index, than the new series index, for the reason that people preparing this type of index were not unbiased and wanted their index high: I stated that the man who advertises his index can not expect employment on the public side of the public utility question and can only get it from the utility side to any extent, and naturally if he shows a low index number he will be without employment and his advertising will simply cost [fol. 685] him money to show no return. It also works when

prices are high, such an index goes up higher than almost anything else, and when prices are low, the index does not go down nearly as much. I have analyzed some of them and compared them with the experience of utilities, and some of them are most amazing. As to whether I think that Public Service Commission employes are above any such possible bias or influence: I do not. I am glad to say I prepared only one index which was used in this case, namely, the wage index, and I can give figures to support that.

I attach considerable importance to the I. C. C. Index for Telegraph and Telephone Lines of railroads. It is true that the Interstate Commerce Commission itself, in giving out their indexes, adds the caution that these indexes are not applicable to use as a determination of reproduction costs for individual railroads, and they do not use them for that purpose themselves.

Every railroad has a telegraph or telephone line to assist in its operation. As to whether the layout of telegraph or telephone lines for the control of operations and running of trains is very different from a plant like that of the Telephone Company with immense central offices and its vast multiplicity of machinery: When you mention central offices, you lay your finger on the biggest differences; the railroads do not have as large a proportion of equipment which is comparable with central office equipment. They have pole lines and wire and other equipment. This plant account is a mixture of telegraph and telephone plant not segregated. The lines are those that run along the railroads and are used in the operation of the railroads, as dis- [fol. 686] tinguished from the telephone business in which the Telephone Company is engaged. As far as central offices are concerned, the railroads do not have as large an equipment as the Telephone Company. It is much smaller equipment. But when we break it down into the elements, as I do on page 69 of Exhibit D-5, we get away from that somewhat because I break it down to pole lines, aerial wire and conduits. I apply to the central office telephone equipment on page 69, the telephone equipment component part of the I. C. C. Index. That telephone equipment is not nearly as large as central offices and is not as complicated. It includes telephone selectors and switching equipment.

As to whether, if raw materials of relatively unmanufactured articles have gone down much more than highly manu-

factured articles, I would suppose that the index would not be comparable in any way: I would say that when you get a wide property like this, it is not one single commodity but takes into consideration many raw materials, and I would expect it to conform to the Commodities Index. When I know it conformed to that index in 1923, it is hard to see why it does not today.

As to Interest during Construction, on page 69, Exhibit D-5, I take the amount shown on the Company's books. It is true that in the I. C. C. Index for railroads, Interest during Construction is given as 6.5% of the total reproduction cost. There is no index number for Interest during Construction in the Telegraph and Telephone Line Index which I have used here, but I think that Interest during Construction, being related to the base value or cost of the property, follows the trend of value. I would like to state here in connection with that, I would be amazed if I saw on the books [fol. 687] of the Telephone Company or any similar utility an item of Interest during Construction which was more than 1% of the cost of the property because a lot of the property is constructed within a month's time or two months' time. When an average of four months' construction time is taken that gives 1% Interest during Construction. There are not many projects which go beyond four months. So it is my experience that Interest during Construction does not go beyond 1%.

Referring to Exhibit D-6, my analysis of such overheads as are included in the Company's plant accounts: When the property, included in those accounts with those percentages of overheads, is charged out of service, the overheads included are charged off too. There is no accumulating or pyramiding of overheads involved in the process. I have heard what some of the witnesses said about the relative merits of piecemeal and wholesale construction, and in connection with that, that the interest item was much larger on a wholesale construction, though the economies in construction were greater in wholesale construction. As to whether the longer program of construction would affect the interest rate accordingly but would affect costs in any inverse way: It would, but not the rate. In other words the longer the construction program, the greater the quantity of interest during construction would be.

With reference to Exhibit D-7, my study of the depreciation reserve, it is true that in a slack time after some period of years there will be a normal tendency of the depreciation reserve to increase as a percentage, even though the depreciation allowances are not excessive. I can cite examples where depreciation rates were not reduced and telephone plant and reserve would go down tremendously because of a [fol. 688] large retirement. I can cite the case of the United Railways with a large increase in depreciation expense based upon high values and a depreciation reserve increasing very, very slowly because of retirements.

With reference to Exhibit D-8, the tabulation on the first page is of the earnings of all kinds of leading industrial corporations. As to whether in the Standard Statistics publication from which I took this tabulation, there were two computations given; one such as I give here based on Plant and Investments, less the Depreciation Reserve, and the other based on the inclusion of stocks of materials, for instance, which the Western Electric has to keep on hand to supply the Bell business: I do not see that second computation on the photostatic sheet which I have. However, these other companies have a large stock of materials, though not as large as the Western Electric, perhaps.

In the case before the Commission I offered a study confined to manufacturing companies, representing compilations of corporations selected by myself. In testifying on that I said that I thought that was the real basis on which to work up a study of that kind, manufacturing concerns have large investments in plant, have large inventories of raw materials, and they are items which go to make up the product they sell. In other words I expressed the view that these large inventories of raw materials ought to be included in any fair estimate as a basis of comparison with other companies. I think it was proper to include investments in plant and inventories of raw materials in any fair [fol. 689] estimate as a basis for comparison with other companies. In this study, Exhibit D-8, I had to make the Western Electric conform to the study of Standard Statistics. These other companies have large materials too. For instance, in 1927 the total fixed capital account less depreciation reserve in a group of companies was $14,000,000,000, total materials $5,000,000,000, so they had large items. I do not think they were quite as large as the ratio

of the Western Electric for 1932. The Western Electric had large inventories at that time. As to why, when the second method was the one I thought proper, did I select the way most unfavorable to the Western Electric: I do not think the method is most unfavorable to the Western Electric. The study of Standard Statistics showing these percentages is exactly the same as in my exhibits and I could by making adjustments to that study, make another study, taking the inventories into consideration. I did not do that. I do not know, frankly, what the difference is. I think, perhaps, the earnings of the Western Electric Company would not be as large, but I don't know how they would compare, as I did not make that particular study. I took the study of Standard Statistics, and that is the only percentage given in that study.

It is true I referred to the ability of the Western Electric Company to plan production in big years as being a strong element leading to economy in its operations. I would think that it would be one of the possible consequences that the Company during flush years might make a profit comparable with other corporations and yet at the same time be able to hold the actual prices at which it sold [fol. 690] its commodities down to a low figure. It might follow. It follows in the automobile industry to a certain extent. Their budgets are not as inelastic as the telephone companies; by that I mean they plan for three months ahead, and having planned production they can reduce prices substantially.

Referring to Exhibit D-9, my study of Working Capital: Looking at that item from the historical point of view, the Commission has pretty steadily cut Working Capital down. Of course we ought to be open to new ideas in matters where there is no definition by the courts. Working Capital has not been trended by anybody in this case except in the one exhibit (page 8, Exhibit D-5) which I referred to as the Court method. While the volume of the Company's business has grown enormously, the Commission has kept the working capital pretty stationary. As to whether I know that the Western Electric no longer makes advances on Class "C" stock: I did not know that. I heard some testimony on it. I did not know anything first hand about Class "C" stock because when I examined the books of the Telephone Company I did not see the Class "C" stock re-

ported. I am not responsible for the exclusion of it; I do not know anything about it. If the Company had been allowed the working capital that the Commission says it usually allows to electric companies, it would have made a difference of about $400,000. The different treatment is solely due to the fact that the Telephone Company bills for its service in advance where the electric companies render their bills after reading the meters, that is after the electricity has been consumed.

Referring to Exhibit D-10, which is a comparison of the differences between one of my suggested values and the [fol. 691] Company's valuation: I trend going value down about 42% under my methods. In another part of the table I have taken the effect of Mr. Speer's figure of what would be the result of eliminating the 10% increase of certain Western Electric prices. As to Exhibit D-5, page 67, I stated that if we valued the property by the Western Electric Index and assuming no increase in price after 1929 we would get a certain result. In working up that exhibit, I assumed that the 10% was taken off of all of the property. That is not a different assumption from the one I have adopted in Exhibit D-10, in which exhibit I am trying to isolate the points in issue. One of the points in issue is $1,500,000 due to the 1930 price increase of the Western Electric Company; in this comparison that amount should be added to my figure or deducted from the Company's figure. The balance of the difference shown in this exhibit, that $3,770,000, I cannot identify or break down into elements.

As to the 1930 increase in Western Electric prices, I understand that the 10% increase applied only to telephone apparatus manufactured and sold by the Western Electric, and that it did not apply to lead-covered cable which is made by the Western Electric, nor to all the items which the Western Electric Company buys on the outside for the Associated Companies. It is true that in the study on page 67 of Exhibit D-5 I assumed that the 10% was off everything. I applied the index for the purpose of showing what value we would get by the use of the Western Electric index, because it was stated that the Western Electric index was kept stable or had come down a great deal in early years. I wanted to show it compared very well with the others, except for the increase in 1930.

Referring to Exhibit D-11, the schedule in which I com-
[fol. 692] pute what I call the real income of the Company: It is as if there was put into effect with respect to this Company alone, a stabilization of the dollar such as is said to be the object of the Federal Government and that is more or less our idea, I think, when we find fair value. It is just an extension of the same principle. It is true that all the table shows is that if you assume as a base that, for a particular purpose and object, a dollar is worth more now than it was, what I call real income depends on what you want to spend it on.

Referring to Exhibit D-12, the first part of that shows the rates of bond interest on public utility issues during the first three months of 1933. As to whether, having heard witnesses testify as to how they would finance a company of this sort, to reorganize it and obtain money under the most favorable conditions, that they would put so much per cent in bonds and so much in preferred stock, and the balance in common stock, the figures in the first schedule are comparable with what these witnesses said would be the bonds portion of the capital structure and not with the return on the whole capitalization: These figures have to do only with the bond money and not with what would have to be the return to attract capital. However, those witnesses testified that about 30% or 35% should be bonds. I do not agree. Take the Consolidated Gas Company, 50% of its capital is bonds and yet it floats bonds at 4.12%, almost in the class of government bonds. I would say that 50% bonds is the ideal ratio, with 25% preferred stock and 25% common stock, is a splendid ratio for public utilties.

On page 19 of Exhibit D-12, showing the Telephone Com-
[fol. 693] pany's earnings for four years, I take the year 1929 as a base and put that at 100. I then give the ratio of the net earnings each year on that base. That does not mean that the rate of earnings has gone up during that period, because between 1929 and 1931 the Company had grown some $4,000,000 in property. When I show that the net earnings went up from 100 in 1929 to 114 in 1930, before they dropped to 96 in 1932, that does not show there had been any corresponding rise in the income as compared to the growing base of the property of the Company. The figures refer to the absolute income expressed in dollars.

I have used the building construction indices of the American Appraisal Company. As to whether there is a warning on all the pamphlets on which these indices are put out, that the indices are not to be used for specific purposes: I read the warning in my direct testimony. Referring to Exhibit D-13, the curves stop with the line 1932. I think they are the averages for the year. It may be true that I practically stopped in the middle of 1932. I put that diagram in evidence for one purpose, to show that the space between the lines may be grossly misleading and is likely to be. It is true that since the middle of 1932 a little less than two years has elapsed, but the exhibit in which I trended value by the American Appraisal Index is brought up to date. The graph on Exhibit D-13 is not.

The proportions of labor and material in the Western Electric Company construction in 1929, according to that Company's estimates, was labor cost $17,900,000 and material cost $14,800,000. The actual cost was $14,900,000 for labor and $9,600,000 for material, which is pretty close to the ratio of 45 to 55.

[fol. 694] I will produce the date I got from the I. C. C. on which I base my calculation of this index, so that it can be checked up by some one for the Company.

(The data referred to was produced to the Telephone Company and was subsequently filed in evidence as pages 3, 4, and 5 of Plaintiff's Exhibit A-55.)

Redirect examination:

From 1924 to 1932 the annual allowance for depreciation was greater in every year than the actual retirement charged against the reserve, except in 1924. As to whether that was a normal phenomenon that is not reflected in any way in the moderation of the annual allowance; I think it might be normal. It is not abnormal in any particular sense.

[fol. 695] PAUL L. HOLLAND, a witness of lawful age, was produced by and on behalf of the Public Service Commission of Maryland, Defendant, and testified as follows:

Direct examination:

I am 47 years old, I reside in Baltimore and my present occupation is Chief Engineer of the Public Service Commission of Maryland. I was graduated from the United States Naval Academy in 1908, remained in the Naval Service performing line and engineering duties until December, 1915, when I was retired on account of ill health. In March, 1917, I was recalled to active duty for the period of the War. During the first few months of this period I was a member of the joint Army and Navy Board of Survey for Merchant Vessels, 6th Naval District. From October, 1917, until December, 1919, I was Instructor at the United States Naval Academy in the Department of Electrical Engineering. Since leaving the Naval Service I have been engaged in engineering in the following positions: December, 1919 to April, 1922: General Superintendent of the Georgia-Alabama Power Company, Albany, Georgia. The duties of the position involved operation of steam and hydroelectric plants, building and rebuilding of transmission and distribution systems, and the purchase of material in connection therewith. July, 1922 to March, 1924: Staff Engineer, Carolina Power and Light Company, Raleigh, North Carolina, engaged in topographical surveying, cost accounting, mak- [fol. 696] ing up tax returns, design and estimating. April, 1924 to January 1, 1925: Chief Engineer and Assistant Manager of the Blue Ridge Power Company, Spartanburg, South Carolina. Engaged in similar electric power system duties and in power sales and electrical merchandising. January, 1925, until April, 1931: Associated with Mees and Mees, Consulting Engineers, Charlotte, North Carolina, engaged in design and construction of hydroelectric, steam electric and industrial power plants, industrial buildings, water works, paving, etc. During the last two years of this period I handled the court and commission work of that office, which involved numerous damage suits, claims and rate cases. The last three years I have been Chief Engineer of the Public Service Commission of Maryland.

I am not a technical telephone expert, and will not testify as such. In this case I am prepared to testify primarily on one subject, currently accruing depreciation, that is, the rate of impairment of the value of telephone prop-

erty and its volume under existing conditions. This depreciation is expressed as percentages which when applied to the various items of the plant represent the amounts in dollars to be credited annually to the depreciation or retirement reserve.

As has been testified, several factors affect the retirement of telephone property. Witnesses for the Company have testified before this Court, before the Public Service Commission and before the Interstate Commerce Commission that growth is a factor which more than any other single factor affects retirement of telephone property. It [fol. 697] has also been testified that seldom, if ever, is the retirement on account of obsolescence alone. This factor is properly recognized when retirements are made as the result of inadequacy or other things. Physical depreciation is going on all the time and in the case of some few items is the prominent cause of the retirement. Storms, fires, damage and other things are the other causes of retirement. It will be noted I am considering the same factors affecting consideration of retirement as were explained by witnesses for the Telephone Company. The difference of results of value is due to a difference of evaluation of these factors which changes the service lives *of service* of the property.

I agree with the testimony of Mr. Woodford before the I. C. C. which has been given here by Mr. Gompf, as follows:

"Growth eventually causes buildings, central office equipment and other classes of plant to become inadequate and in most cases is the largest single factor affecting their service lives."

Since inadequacy has been in the past a most important factor, I made a study of the reports made to the Public Service Commission of Maryland as to unfilled orders for telephones. The number of such orders is an indication of the adequacy or inadequacy of the plant. A summation of these reports from 1929 to 1931—that is approximate, I don't remember the exact months, but it was between three and four years—indicates that of a total of 3,969 orders held up, (that is phones not installed for more than [fol. 698] 60 days) 3,929, or 99% were held up by the subscriber, and 1%, or 40 telephones were held up by the

Company. This would indicate that the plant was reasonably adequate in 1931 when the Company had over 221,000 connected stations. I have prepared an exhibit showing graphically the connected stations over this period.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-18".)

This graph shows the connected subscriber stations in Maryland from January 1, 1924 up to the last monthly report rendered by the Telephone Company to the Commission, which was for the month of January, 1934. I do not think the February report is in yet. In constructing this chart I had to make some small assumptions. Prior to January, 1933 the Company reported to the Commission the average number of stations in use monthly. Beginning January 1st, 1933, they reported the number of stations in service at the end of the period. Therefore, to get something that was comparable, without a break in the curve, I took the average stations for two successive months and took the arithmetical mean of that, and assumed that was the number of stations at the end of the period. They are plotted here as of the end of the month or quarter. The assumption would probably make the difference of the width of the line, not more than that.

It is noted that the maximum of 221,211 stations was reached in December, 1931, and that the minimum, 198,127 in August, 1933. It is apparent that inadequacy cannot be a factor affecting depreciation or the retirement of telephone plant until such time as the facilities are taxed to the same degree that they were at the peak in [fol. 699] 1931, shown in this graph as of the latter part of 1931, or the first few months of 1932. It is, of course, impossible to predict when this condition will come about. We may assume any rate of growth beginning now or any number of months in the future; the result, as to when the facilities will be taxed to the same extent that they were at the peak, is purely conjectural.

It is my opinion that the number of telephones is a fair measure of adequacy of the whole plant, but it is not the complete measure. I went back to see whether we had had any complaints along about 1931 of improper or insufficient telephone service. We had practically none. Ev-

ery indication to the Commission was that the plant was adequate in 1931. At that time there was some plant margin which I will discuss later; a little more plant than was necessary, though it is necessary to have a small margin all the time. We have no reason to believe there was any inadequacy at that time. The number of telephones at the end of 1928 compares roughly with the average of 1933.

I said it is pure conjecture as to the result of the growth of business in the future. You can make any assumption you want to, and, for example, if we take the rate of growth from August, 1933 up to date and assume that that will represent the average growth, it will take approximately 10 years to get back to the peak reached in December, 1931. It is to be hoped that people who have given up their telephones will come back, if times permit, much more rapidly than the Company acquired new subscribers in the [fol. 700] period of 1928 and 1929. Before the Public Service Commission we had quite an argument on this point, and several graphs were shown on the blackboard. Instead of following the curve we assumed that it was following at that time, it went considerably below that. The experience between 1928 and 1931 is that it has run flat; so it is anybody's guess and we can not tell.

Just prior to the hearing before the Public Service Commission I made an inspection trip with one of the Company's engineers for the purpose of familiarizing myself somewhat with the telephone plant in Baltimore City and nearby. We visited the Calvert-Plaza central office, the Chesapeake-University-Belmont office, the Towson office and the Cockeysville office. They were typical central offices. I noted during this trip that the Company had at the peak of its business some so-called plant margin or facilities not used and useful in the public service. For instance, a considerable part of the building on Guilford Avenue, which houses the Chesapeake-University-Belmont central offices, has never been used. There is considerable space for other frames and additional equipment. A check of the central office lines was made in the Plaza-Calvert exchanges by counting the unused jacks in the switchboards, and it showed from 23% to 41% of the jacks unused. That was just a rough check made by counting the plugged jacks in any one section of 100 jacks, just spotted around over the board. Some may have been given up and some may

have been provided for future growth. I had no way of distinguishing between the two. At that time they were unused. That was just before the last hearing before the Commission last year. The Commission made no deduc-
[fol. 701] tion in its valuation for any proportion of this unused property, on the assumption that inadequacy is not a factor to be considered at present nor for an indeterminate number of years in the future.

Assuming that the Company will follow its past policy as far as making retirements for obsolescence is concerned, I have prepared an exhibit showing the currently accruing depreciation resulting from physical wear and tear, rust and decay.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-19".)

This physical depreciation that I have shown on Exhibit D-19 is exclusive of damage or deterioration, which is periodically repaired or removed by proper maintenance. The percentages represent the rate of decrease in value resulting from such wear and tear or corrosion as cannot, or normally is not, repaired by maintenance. When I speak of maintenance I mean the amount of annual expense charged to operating expenses as maintenance.

I have used the same general method as employed by the Company in determining these depreciation rates, that is, cost less net salvage divided by the service life. However, service lives, as used in my computations, are estimated after studying present conditions, conditions such as have never prevailed before in the history of the Company. It will be noted that in the case of such items as poles, cross arms, furniture and fixtures, items which wear out or corrode, the percentages I arrived at are very nearly those [fol. 702] of Mr. Gompf. In other words, physical life and service life are practically the same. There is one exception in method which I will call attention to, Station Apparatus, Account 231. I have used over-all service life instead of life in one location. The cost of moving that apparatus from one location to another is charged to operating expenses; and, therefore, the use of service in one location or the over-all service life with a different salvage value, makes very little difference in the result.

Without going into a detailed explanation of this exhibit, I will merely call attention to one or two items. For instance, for Account 207, Rights-of-Way, I have shown no figure at all. The determination of the amount of amortization of this account covering such property as may be abandoned and has to be charged off, is not an engineering problem, but is an accounting problem largely. I have no way of determining it from an engineering study. It is a very minor item, and I have just averaged it for the last 10 years, which results in about $10,000 a year. For the next account, Buildings, I arrived at a figure of 1.5% by weighting various items, the various component parts of a typical office building, and the assigning of a weight to each part. By this method I arrived at an average weighted figure of 72 years, but I have reduced this to 66⅔ and assumed no salvage. Of course in practically all cases there will be some salvage. The fact that I have allowed no salvage whatever makes my figure generous to that extent. In the case of a number of other items I have assumed only sufficient salvage to pay the cost of removal. The same percentage figures may be arrived at by assuming a shorter life and greater salvage value. In the case of poles [fol. 703] and cross arms, Accounts 241 and 251, I have assumed a negative salvage value of 10% and a service life of 20 years which gives me a depreciation rate of 5.5%. This life of 20 years was arrived at by the Company's experience which indicates that in the past they have experienced during some periods an average service life of as much as 20 years. Considering the fact that a large percentage of the poles that are now in use are creosoted, they may be expected to have a service life much greater than chestnut poles used in the past, and the allowance of 5.5% is quite generous.

To other items which are not subject to physical depreciation to any appreciable extent, such as copper wire, underground conduits, I have assigned 1% per year, which is sufficient to cover in some measure any casualties that may be experienced. On those items which are retired primarily as a result of wear and tear or corrosion, inadequacy has no effect, and in making my estimate of service life I have considered that factor on such items as poles, cross arms and telephone fixtures. The degree and effect of inadequacy must be a matter of judgment.

As to whether the substitution of French phones is due to the older type of instrument wearing out physically: In that case I made an estimate based upon the figures of service life very close to the over-all service life by the Company. They show I believe, about 6 to 8 years, according to the period in one location, but stated that it might be used in two or more locations. I have assumed an over-all life of 16 years in all locations. If the French phones entirely displace the old type of instruments, that [fol. 704] is called obsolescence, that is to say, the retirement by virtue of obsolescence.

Q. (Judge Chesnut): Now isn't that a real factor in such a progressive science as telephony, and can you with safety disregard it in determining the depreciation?

A. We have not disregarded it. I have used an over-all service life very nearly the same as the Company testified to, which took that into consideration.

The Company's witnesses have said that no retirements are made as a result of obsolescence, such as the Court has referred to in the substitution of dial phones for the old style receiver, until a change is dictated for some other cause. In other words, a dial exchange is seldom put in unless the old exchange becomes inadequate. This does not assume that no further progress in the art is likely to occur until the dial exchanges physically wear out. As to whether I assume that a dial exchange is going to be used without any improvement until it physically wears out: I think if conditions remain as they are now over any great number of years it may become economically feasible to replace it for reasons other than physical wear and tear, but in the next few years I do not anticipate any changes will be made as the result of obsolescence, and the physical wear and tear are the controlling elements.

For the present, I think that these depreciation rates for this item, which I suggest, would be safe until such [fol. 705] time as inadequacy again becomes an important factor to be considered. When that is going to take place none of us knows.

I calculate my rates of depreciation on the book cost of the Company's plant. If I reduced the allowance as shown on Exhibit D-19 and based the percentages on value as found by the Commission instead of book cost, it reduces

that amount of depreciation expense to approximately $1,000,000. It is not correct that the estimate that I am making here is in substance that adopted by the Commission. The Commission increased my allowance by something over $300,000 in the exercise of their judgment as to what conditions in the future would be.

In answer to the Court's question as to how I arrive at my percentage on these items: I will start with the first item, Buildings, for instance, I took a typical office building, of which I had an analysis. I weighted each element, brick, steel and concrete as lasting for 100 years; the plumbing will last fewer years, the window sashes will probably need replacing if they are wood, as most of them are, the lighting system will have to be replaced before 100 years. I weighted each one of these elements and assigned a different life to the different component parts of that building and then arrived at a composite life of 72 years, but I rounded that out, assuming no salvage, to the annual depreciation as 1.5% on the assumption that broken window panes and painting and so forth are taken care of by maintenance and charged to the maintenance account.

Q. (Judge Soper:) Due to the fact that you are taking into consideration in that building, certain items, and reach [fol. 706] such a tremendously long period, aren't you rather departing from your idea that we are going to come back some time?

A. I think not. I stated, your Honor, that those rates will prevail until such time as inadequacy again becomes a factor. No large building of the Telephone Company has ever been abandoned that I know of except for inadequacy.

Following that out, I think that the factor of past depreciation attributable to inadequacy would be approximately 50% because the experience of this Company has been that by charging in dollars approximately $2,000,000 annually for depreciation expense, it has just kept stable at 20%, the relation of the depreciation reserve to its fixed plant. Even though the balance in ratio has been kept uniform over a period of 20 years, I think $1,000,000 a year would be sufficient for the present situation. As to whether there is some question whether such a great change is justified by a mere comparison of present conditions with the peak period, December 1931, bearing in mind that we are only

two years away from that period: I think it is reasonable that the conditions now are so vastly different that the Company's annual depreciation expense is practically one half. As to the basis of that opinion: I made a check by comparing the charges and credits to the depreciation reserve last year. The depreciation reserve last year, with capital account fairly stable, just a few dollars out, increased $1,200,000. I deduct in my depreciation $1,200,000 from what the Company credits to the reserve. I did not know that until after I had made my figures. It is a perfect check.

As to whether in the case of buildings, I take into account only ordinary wear and tear without any reference [fol. 707] whatever to the fact of the possible inadequacy of the thing for some future development: I take the position that the buildings were adequate at the peak of service in 1931. They are more than adequate for service today and I think it is reasonable to assume that the Telephone Company will not abandon a building until it has become necessary to add more equipment. It is true that I am only allowing for wear and tear as far as buildings are concerned, though I have a little cushion in that item as I have stated.

As to the question whether, in my opinion, a decrease of approximately $800,000 in the annual allowance for depreciation will tend to reduce the reserve beyond the point of safety or below the present percentage—if the figures allowed on this scheme by the Commission are correct it will have no effect on the reserve. In 1933 the fixed capital was practically unchanged. There were some charges made to the depreciation reserve and some credits, but the net effect was to increase the reserve as of the first of this year approximately $1,200,000. This indicates that during 1933 the retirements were very much reduced because accruals to the reserve were reduced. When I made up my estimates of percentage for depreciation expense I did not even know that there had been an increase in the Company's reserve for 1933, until that information was furnished to me this morning. The fact that the reserve was increased in 1933 had no connection whatever with my estimate of percentages for future depreciation expense.

Earlier in my testimony I said that, in my opinion, the force or effect of inadequacy brought about approximately [fol. 708] 50% of the retirements. However, the depreciation expense which I have set up on Exhibit D-19 does not represent a 50% decrease from the Company's figure on a comparable basis, but only about 35% decrease. In other words, I have not entirely given effect to the 50% in my estimates. As I also stated, there are other items in which there is a considerable cushion.

Cross-examination:

It is true that in the use of the straight-line method, as it is customarily applied, several kinds of depreciation are taken into consideration. One of these is rot, rust or decay, or physical depreciation, as contrasted with functional. I took into consideration rot, rust and decay. The underlying cause of those kinds of depreciation is the elements. Another kind of depreciation is wear and tear which is brought about by usage. Another factor, which I considered under the heading of public requirements, is the removal of plant through highway improvement, or change in location by elevation of highways and streets. If the change is of such a nature as to require relocation of plant, then the Company has to move its plant. One instance in Baltimore City is the change in the Frederick Road, which brought about a lot of changes.

The kind of depreciation generally understood as obsolescence is caused by improvements in the art. Inadequacy is caused by the inability of existing plant to take care of the calls or demands made upon it, or in other words the growth of the business. Growth which results in inadequacy I characterized as probably the most important reason [fol. 709] for change in the past prior to 1932. As to whether growth would always fundamentally determine the adequacy of the plant: Not necessarily so, growth that may come about between now and the time that the present plant becomes taxed to the same degree that it was in 1931 would have no effect whatever on the present plant. Growth does however cause inadequacy, but I do not mean to say that inadequacy or obsolescence will not, in fact, some day terminate the life of the existing plant of the Company. I qualified my exhibit to this extent, that those rates and amounts apply for the present and for an indeterminate

number of years in the future. When the plant demands again approximate those in the latter part of 1931 and 1932 inadequacy will then become a factor and provision must be made for it.

Under existing conditions I see no reason to take account of inadequacy and obsolescence if the plant is more than adequate. It is proper to take account of wear and tear, rot, rust and decay because they go on at all times. This applies also to public requirements. If circumstances were such as prevailed prior to 1932, I would not eliminate obsolescence and inadequacy. But I think in view of the conditions that exist at this time, I am justified in eliminating them at the present and for a while in the future, until such time as the connected subscriber stations approach the peak for which plant has already been provided.

Referring to Exhibit D-18, it is true that the stations show an upward trend from August, 1933 to date. Up until the end of January, 1934, the last report received by the Commission, the Company had gained 1,171 stations since August, 1933. The number of stations at the end of January was 199,298. If the Company gained 314 stations in [fol. 710] February, 1934, and 731 stations up to March 24th, 1934, these figures would have to be added to the figures I have used.

When testifying in this case before the Commission in the summer of 1933, I stated that the period during which the plant would not be on a basis where inadequacy and obsolescence would have to be considered was approximately 4½ years. As to whether I now state that that period will be 10 years: I explained there was considerable argument at the time of the Commission hearing as to when the upturn would take place. On the assumption it would take place at the time of the hearing or approximately after it and would increase at the same rate the subscriber stations increased in the period immediately preceding the maximum, the distance between the curves which at that time we drew on the blackboard approximated 4½ years. As to how long this period should be extended: I do not know. I did not make a statement to this Court that I think the period should be 10 years at the present time. What I say is, that if we assume that the future growth will be the same as has been experienced since August, 1933, it will be approximately 10 years, taking into consideration the gain

of 1171 stations in the five months, which is the growth the Company experienced up to January, 1934.

(Counsel for the Telephone Company stated that the net gain in stations for February 1934, was 314, and for March 1934, up to March 24, was 731, and that while these figures had not appeared on any of the Company's exhibits, they were available for check on behalf of the Commission. Counsel for the Commission stated that he was not questioning these figures.)

[fol. 711] The witness continued:

If I assume that the Company has gained 1,100 in two months, then the slope and the line from the termination of the line I have shown will go up at just half the rate that it came down, or there would be somewhere between 7 and 8 years between the crests, in other words, based on the present gain in stations the period of retardation would be 7 or 8 years.

While depreciation rates are based on service lives and salvage, in the Commission hearing I used only the rates, giving no service lives or average salvage, and I have not expressed those in my exhibit in this case. Of course I had to assume some service life and some salvage in order to work up those rates.

(Thereupon there were read to the witness the following questions and answers from page 5346 of the transcript before the Commission:)

"Q. And are your depreciation rates based upon the service lives or the remaining service lives of the depreciable property?

"A. They are not.

"Q. Then, I believe you said they were just rates expressed as a percentage?

"A. Percentages, representing physical depreciation accruing currently.

"Q. And do you have any basic figures from which the [fol. 712] percentages which you obtained are available? That is, any data with relation to those basic figures?

"A. No basic data other than general engineering experience as to the life of property."

As to whether the question asked and answers made by me are correct: I think they are. The first question there to which I answered, "No", was whether I had considered remaining service lives, which I did not. My percentages were based on general engineering information as to the rate at which physical property decays or rots or wears. In some of them I assume no service life at all, as I have explained in this testimony. There are no service lives based upon physical depreciation of copper wire, of underground conduits and quite a number of items. There are others in which it was necessary to assume or consider some service life, or some life—I did not call it service life. I called it physical life, because on account of the radical change in conditions I am departing very materially from the service lives that the Company has assumed.

On Exhibit D-19 I show only the rates, although I stated I had considered service life and salvage. I did not show them on the exhibit because I did not think it necessary. The rates are exactly the same as I testified to before the Commission.

I have had no experience in the operation or engineering of telephone property, except such as is involved in install-
[fol. 713] ing and designing telephone systems to be used in connection with power systems, such as single instruments and lines. As to whether I have made any studies or investigation of the life of telephone property: I have made a very detailed study of the exhibits submitted by the Company to the Public Service Commission, setting out their mgethod of computing service lives, depreciation and so forth, and I examined four buildings housing seven exchanges out of the 130 in the State.

My recommended rate for manual central office equipment is 2.5%. That is based on a 40 year life and salvage only sufficient to pay the expense of removal, that is, there is no net salvage. As to what studies I made to obtain the 40-year service life: That was an estimate made without tying myself down exactly to a service life, on the assumption that manual equipment has an almost indefinite life for certain parts of it, just as a building. There are certain parts that go to pieces and need replacement at frequent intervals. Those parts are replaced by current maintenance. The main frames, for instance, in the central

office, are steel, and as far as I know, they will last forever. The wiring under present conditions, where changes are minimized to a certain extent, will last for a long time. Certain parts, for instance the furniture, the desk at which the operator sits, will wear out after a while and require replacement. But I think 40 years is a generous allowance. I see no reason why it should not last longer than that.

I have not figured on the replacement of total positions; repairs and current maintenance are charged to main- [fol. 714] tenance expense and not to the depreciation expense. I do not assume at all that those frames will stay where they are for the full period of 40 years. I assume, if present conditions remain, that from a physical point of view they would last 40 years. But I do not assume that conditions are going to remain so for 40 years, by any means. As to whether this life of 40 years represents the over-all life or the average life of the equipment: The average life is represented by 40 years. Some of it will last for 140 years, such as the steel frames. I see no reason why they should not last forever, if they are kept properly painted, and if something does not happen to them. There are some good wooden parts of the frames that will last less than that and some wooden parts of equipment which will last less. As to whether I mean to say that certain parts of the central office equipment will remain in service for 140 years, and that a large part of it will remain in service much more than 40 years: I say that, under existing conditions, if the property is subjected to physical depreciation only, that it will last that long or longer. But I am not trying to convey the impression that I expect it to stay there unchanged for 40 years or even for 15 years, perhaps. As to whether the change of certain parts in 15 years or in 20 years would affect my over-all life: It would not affect the 40 years which I have given because that is the average. Under existing conditions, it is my best judgment that the average service life of manual central office equipment is 40 years if it is subject to physical depreciation only and not to inadequacy.

I stated that I counted the number of jacks in the Calvert- [fol. 715] Plaza Exchange and I used that to show the adequacy of that office at the present time. I took several sections each of 100 jacks, just at random and stood behind the operator and counted the plugged jacks, that is, the

holes with little plugs in them to prevent the operator from sticking the jack in by mistake. There were several such hundred-jack sections, and I counted the jacks that were plugged. I know there are different kinds of jacks, though I do not know the technical name for all of them. I know there are subscribers' multiple jacks, answering jacks and trunk jacks. As to whether there is any duplication between the jacks, that is whether they appear more than once on the same board: I do not understand that these jacks appear more than once on the same board, though they appear in multiples on several boards around the room. I did not eliminate those jacks that appear on several boards. I counted about half a dozen different sections of 100 each. I did not deduct in my count jacks which are plugged for Private Branch Exchange growth where there must be a sequence, nor jacks held in abeyance depending upon directory changes, nor jacks that are held for lines in trouble. My count means simply that there were available on the sections in the Calvert-Plaza office, a considerable number of jacks that were not used or useful at that time. In fact, there are whole sections with room for extensions above any jacks in use. As to whether the jacks mentioned are available for the several purposes just stated: I presume that the jacks are available for such use as is customarily made of jacks. I do not think the Court gathered from my testimony that from 23% to 41% of the jacks in the Company's total exchanges in the State of Maryland are idle. [fol. 716] The principal difference between my annual depreciation and those submitted by Mr. Gompf is due to the fact that I eliminate inadequacy and obsolescence, as the elimination increased the service life very materially.

As to what is my assumption as to the over-all life of a building, there are some portions like concrete foundations and embedded steel work that will last 1,000 years. There are other parts which we assume ought to be replaced every 10 years. The average life on that basis, worked out for a typical office at 72 years. As to what is the over-all life of a building, if the average life is 72 years: If you mean how long will it last as it is today, then the life is the same life as the life of the shortest-lived component part of it which may be the lighting fixtures or the plumbing, but I am assuming that that will be replaced from time to time to keep it in usable shape. In my estimate, I did not consider addi-

tions to the building, but I assumed replacements of component parts. I think that 72 years is the over-all life of the building. As to what is the period of time that will elapse from the time the Company commences to use the building for telephone service until they cease to use it: I have assumed 72 years in my computation. I changed that life, as I testified previously, to 66⅔ years. In reaching the period of 72 years I have assumed that the lighting fixtures, roofing, elevators, plumbing, heating, ventilation and so forth will all have to be changed at from 10 to 50 years. It is true that those things will be charged to depreciation expense, but I have taken that into consideration in arriving at 72 years.

I can not say what rate of depreciation I would put on a piece of property that goes out of service only on account of [fol. 717] inadequacy. I cannot set up a rate of depreciation on the assumption of a condition which I have specifically ruled out, unless I made a study to find out why inadequacy was a factor, and that I have not done in this case.

[fol. 718] W. Watters Pagon, a witness of lawful age, was produced by and on behalf of the Public Service Commission of Maryland, defendant, and testified as follows:

Direct examination:

I am 49 years old and live at 114 St. John's Road, Baltimore. I graduated from Johns Hopkins University, 1905, with degree of A. B. in mathematics and physics; Mass. Institute of Technology, 1907, with the degree of S. B. in Civil Engineering; Harvard University, 1910, with degree of M. C. E. (Master in Civil Engineering).

My employment and experience have been as follows: (1) June, 1907 to September, 1909 by Baltimore Bridge Co. (now Baltimore Warehouse, Carnegie Steel Co.) on detailing, checking, estimating, field supervision, etc., of steel and concrete buildings and bridges, etc. (2) June-September, 1910, traveling in Western Europe and British Isles, making specific study of bridges, buildings, cathedrals and miscellaneous old structures. (3) September, 1910 to December, 1916, associated with J. E. Greiner, Consulting Engineers, then later Greiner & Whitman, and after dissolution of this

firm became junior partner of J. E. Greiner & Company, Consulting Engineers, having charge of design of bridges from Connecticut to Georgia and west to Chicago of coal piers, ore docks, etc., including all preliminary estimating [fol. 719] of costs, supervision of construction, etc., including two years in Connecticut as resident engineer in charge of construction of Washington Street Bridge, South Norwalk, and testifying before Public Utility Commission of Connecticut in re the determination of proportionate share of the cost of the bridge and approaches to be paid by the Connecticut Company for street car tracks, also testifying as to the valuation of marsh lands to be acquired for park purposes, etc.; also in 1916 in charge of preparation of case for the Havre de Grace-Perryville Bridge Company before the Public Service Commission of Maryland in the determination of the rates of toll. (4) January to June, 1917, consulting engineer in private practice, on Fort Avenue Bridge, Baltimore, and a number of small structural problems. (5) July, 1917 to February, 1918, Civilian First Assistant to Constructing Quartermaster, Camp Meade, and February, 1918 to March, 1919, Captain, Construction Division of the Army, First Assistant and later Acting Constructing Quartermaster at Camp Meade and Curtis Bay Ordnance Depot, in responsible charge of construction of buildings, railways, paving, electric system, water supply, sewerage, heating, plumbing, etc., also at Ordnance Depot in charge of all cost estimating for the procurement of funds and latterly acting as Disbursing Officer, etc. (6) March, 1919 to date, Consulting Engineer in responsible charge of design, construction, appraisal, etc., of over 150 projects, making numerous reports on special subjects, of which a few are listed below:

[fol. 720] Fertilizer plants, two; new design, reconstruction, improvement of processes, etc. Oil and gasoline distributing plants, three; design and construction, appraisal, estimating fire damage. Havre de Grace Bridge; in charge of reconstructing foundations, of maintenance, etc., also appraisal for sale to the State of Maryland. Ferry pier, harbor bulkheads, retaining walls in difficult soils, two sand and gravel washing and storage plants, difficult foundations, generating station, gas holders, etc., and waterproofing of difficult structures. Examination of all large American and Western European seaports for City of Baltimore.

Appraisal of Roland Park Water Co. plant at instance of Roland Park Civic League before Public Service Commission of Maryland. Consultant to United States Government on airships U. S. S. Shenandoah and RS-1; in charge of design of two types of airship in competition for contract to build U. S. S. Akron; consultant to several clients on numerous problems in special design to resist wind forces.

Appraisal of all bridges and viaducts of United Railways & Electric Co. before Public Service Commission of Maryland, and consultant on maintenance and repair. Preliminary design and financial report on three airports and consultant to City of Baltimore on Municipal Airport after its completion. Consultant to several clients on difficult hydraulic problems. Investigation of 50 or more industrial plants for financial interests, with estimates of construction cost or appraisals of existing facilities studies of operating costs and methods, etc. Numerous special prob- [fol. 721] lems involving engineering research in varied lines of activity.

(7) Taught Civil Engineering Senior Class, Johns Hopkins University, in Advanced Structural Engineering, for 3 years, 1920, 1921, 1922. (8) Author of several papers on aerodynamics, deterioration of concrete, bridges, mud, seaports, etc. Co-author of Pressure Airships, Ronald Aeronautic Library.

I will testify to the currently accruing depreciation rates of the several classes of plant of the C. & P. Telephone Company of Baltimore City. The basis of my testimony is that for the current year and, perhaps, for several years to come there is no existing inadequacy and that obsolescence, due to the change in the art, does not exist until the time of retirement of property due to other causes. I will present an exhibit showing my judgment of the depreciation rates as they should be upon this basis. Outlining this basis briefly and in general terms: The fact that a moratorium of inadequacy and obsolescence exists has no influence upon other factors of depreciation; for example, physical deterioration, legislative interference, vagaries of the customers, etc. These other factors I consider to be currently acting and, in general, to be unchanged in the force with which they act. Rotting of poles, rusting of iron wires, wear and tear in movable parts of equipment,

damage to typewriters and chairs, etc., storm damage and such factors are uninfluenced by decline in the number of [fol. 722] telephone stations or change in the telephone art. Such factors which, for convenience, may be comprised in one class called deterioration or physical depreciation have their own causes and produce their own individual effects. Again legislative interference which may require removal, for instance, of a pole line because of street widening or re-location, and vagaries of the customer, which depends simply upon the demands or whims and the special conditions of the individual subscribers, may be comprised in one class, called public requirements. There remain then inadequacy and obsolescence which may be classed as functional depreciation. My basis then is to predicate my judgments upon a moratorium of the functional causes without hindrance to the force of the other causes.

Repeatedly, witnesses for the telephone companies have stated that inadequacy is the major factor causing retirements of telephone properties. Repeatedly they have stated that with the exception of certain minor instances obsolescence is not a cause of retirement but only acts to dictate what shall be the nature of the new plant that is installed as replacements after retirements are made. It may be of interest to quote briefly from Mr. Crunden and Mr. Woodford in their testimony before the Interstate Commerce Commission in the hearing which began in 1923. The proceedings were in Case No. 14700 of the Interstate Commerce Commission. I might say in order to save time [fol. 723] that my quotations are not complete quotations.

Referring to one factor which, more than any other, affects the service life, Mr. Woodford, who has already testified here, said:

"This factor is growth—growth in the number of subscribers, growth in the use of the telephone and growth in the requirements as to plant facilities resulting therefrom. Growth eventually causes buildings, central office equipment, cable and other classes of plant to become inadequate and in most cases, is the largest single factor affecting their service lives. It is not the only factor, of course, and its effects can not be isolated from those due to others, but it is the largest single factor."

I would like to reiterate his statement: "Its effects can not be isolated from those due to others." He also says:

"I only want to add at this point that because growth is such an important factor very little of our plant is replaced in kind when it is retired. For example, when we remove wire it is usually replaced with cable; when we remove cable it is generally replaced with larger cable; when we remove central office equipment it is almost always replaced with equipment of larger capacity or different type."

[fol. 724] Later, Mr. Woodford further testified:

"Wherever changes are made in types of property we can foresee those changes generally a good many years in advance. Furthermore, in making changes from one type of material or apparatus to another, the process is generally very gradual and extends over a long period of years, so we can forecast what the effect of these changes is going to be."

A question was asked him: "In other words, you can see a change in the art coming before it actually arrives?" His answer was, "Yes, sir." A further question was put to him: "You, yourselves, primarily bring about the changes that happen in your particular art, do you not?" He answered, "Yes, sir. I think they are primarily due to our developments."

Referring to the question of wear and tear or lapse of time, Mr. Woodford said:

"That is the largest factor affecting the retirements of toll poles, it is the largest factor, of course, affecting the retirement of things like motor vehicles, general tools, and furniture and other general equipment. As to the other property, I do not believe that wear and tear or the lapse of time is an important factor. There may be some cases in which it is, as, for example, in the case of covered wire. [fol. 725] It probably would be an important factor also in the case of iron wire, but generally in the other classes — property it is not."

He was asked a question: "The important factors are such factors as inadequacy, obsolescence, storms and casu-

alties and the like?", to which he made answer, "Yes, sir, particularly inadequacy."

Mr. Woodford also testified:

"• • • it was not my intention to leave the impression that the effect of any particular factor upon the service life of any class of property is or can be determined separately. For the determination of average service lives such a separation is unnecessary. Even if it were desired to have this information, merely as a matter of interest, it could not be obtained in most cases, for the reason that all property retired, under whatever circumstances, is commingled in the records and it would be impossible, no matter how exhaustively we were to go back over the original sources from which these records were set up, to make a separation of the retirements due to particular factors affecting the service life."

Mr. Crunden, who has also testified here, said in the hearing before the I. C. C.:

[fol. 726] "We do not replace one kind of a plant with another because the saving in the other kind of plant, the new kind of plant, makes the old plant obsolete."

He also said:

"But reverting to the telephone business, the thing that takes out our property is inadequacy, and inadequacy takes it out before obsolescence takes hold."

As to whether there had not been all manner of improvements in switchboards, Mr. Crunden answered: "Yes, sir, but not so far as to bring about extensive retirements of switchboards due to obsolescence."

There are other quotations which I could make but I do not want to take the time. However, Mr. Manson, Chief Engineer of the New England Telephone and Telegraph Company, said:

"Of course, if the industrial cities in Massachusetts cease to grow and switchboards were carried along without additions and maintained in a condition that did not require replacement because of physical condition, taking those boards individually, you would get longer service life and,

if you carried it through, lower depreciation rates, if you segregated those particular offices."

[fol. 727] I have found no reason to disagree with these passages that I have read. I checked with Mr. Gompf prior to the case before the Maryland Commission last spring, and I found that his opinions were the same. He also recites in the depreciation study which he submitted to the Maryland Commission, and as he also testified in his testimony before this Court, that these factors are in, I believe, exactly the relative order that I have already quoted. In other words, I have been reading from the testimony given about five or six years ago, but I fail to find that there has been any change in the practice or the opinion and judgment of the Company since these statements were written.

There are very few cases that I have found where obsolescence has caused retirement, but there are certain minor cases, for instance the French phone or the hand set. The hand set, I believe, was used in France 25 years ago. But it did not cause obsolescence in the C. & P. Telephone Company until this Company commenced to make installations of that. It is causing—and I want to be very specifically clear here when I say it is causing obsolescence at the present time: It is causing obsolescence in the salvage value of the older type desk set, even if we assume for the moment, that it is not causing obsolescence in the service life of the equipment. If we make that assumption, it would hardly be fair to make it for the entire United States. If the assumption is not true, therefore, for the [fol. 728] remainder of the United States, then the resale value of the desk set, if it is replaced by a hand set, would be very much limited because there would be substantially no market in which to place it. It goes back to the Western Electric Company. I think it has been called the Class C stock. If it is withdrawn from that it must be either junked or it must be sold to some other Bell or independent telephone company in some other part of the United States. So I am not assuming that there is a moratorium of inadequacy and obsolescence all over the United States. I am assuming it applies to the C. & P. Telephone Company of Baltimore City.

The dial system is a parallel situation in connection with what I have been saying. Of course many inventive minds are always at work devising new improvements or types

which may improve service or cheapen operating cost, and much of this inventiveness is supervised and stimulated by the telephone group of companies themselves. I am referring specifically to the Bell Telephone Company laboratories. But it has been testified both before the Interstate Commerce Commission and before the Maryland Commission that it is not the practice of the telephone companies to place these inventions in actual service until the present plant is removed for other causes. The dial system, meaning by that everything that goes with the dial equipment, does not cause depreciation due to obsolescence because the practice of this Company and other companies is to make [fol. 729] dial installations when a manual exchange reaches the point of inadequacy. Mr. Crunden and Mr. Woodford have testified, and I have endeavored to check it up to make sure it was universally true, that they will not take out a manual exchange and retire it, junk it, or whatever may be done with it, until it has reached the point of physical inadequacy. When it does reach that state it is their practice in most classes of plants to install something different. The dial exchange goes into service when the manual exchange goes out, but the manual exchange is not merely retired or, as Mr. Crunden has said very aptly, the companies would not throw away all of the value in the investment of any particular kind of plant merely because there is something better available. They only throw away or remove from their accounts a plant item when it has reached the end of its life. It is true that radical changes are sometimes made in plant equipment in order to save operating expense.

I was recently reading of the Pacific Gas & Electric Case, I think, where the Company there developed improvements in the method of manufacturing gas, and the question arose there what should be done because of the sudden obsolescence in the existing plant that was created by the invention or discovery of this new method of making gas. As I understand, what was done there was to amortize the loss due to the obsolescence of the older plant in the future. I cite that for this reason. The Company charges off as [fol. 730] nearly as possible in equal annual installments the service value of any particular plant, that is the cost less the salvage value. Now if they are suddenly going to realize obsolescence that they did not anticipate, they are

going to face the situation where, let us say, three-quarters of the value of that plant that is to be retired has already been placed in the depreciation reserve. They then suddenly face a loss of 25% on that plant. In a private industry such a marked saving can be achieved in the cost of manufacture that it may pay them to construct a new plant. The utility is different because it is under public regulation and is not permitted to earn an unlimited return.

The question of retirement because of obsolescence depends, to a great extent, on whether the business is competitive or a monopoly, defining a monopoly as a company which is protected by patents. Such a company is in a very independent position. Obsolescence is dictated by competition and, as far as I am familiar with it, obsolescence in this industry has not been created by competitors. For instance, the dial exchange, unless I am mistaken, was developed not by the Bell System, but by independents. But it was many, many years before it was adopted. I think that dial exchanges were first used back in the 1890's, but they were first used by this Telephone Company somewhere around 1923.

I define obsolescence as the approach toward the condi- [fol. 731] tion when a thing will be out of use due to the change in the art or style. This, like other cases, results in depreciation and I define depreciation as loss in value or, as some other witness has called it, impairment in value. The approach toward the condition when a thing will be out of use may be potential or actual, it may be subjective or objective, it may be continuous or intermittent, and if it is continuous it may progress uniformly or irregularly. I bring that in only because those things have come in in frequent cases on the subject of depreciation. If the telephone companies have developed a new plant item, to that extent where they have proven its desirability, this new item may possess potential or subjective force, which may cause loss of value on the plant item which it will replace. This is in the nature of obsolescence in automobiles in which there is an intermittent reduction in the resale value as each successive new style model is placed on the market or appears in the near offing shortly before the January automobile show.

But in the telephone plant where the installing of the device is almost entirely at the Company's option it is the

imminence of actual installation, that is the actual or objective case, which is productive of obsolescence, and it has been testified that substitution for these things only follows upon removal for other causes. In the central office equipment, that is in the equipment of the telephone exchange, the actual introduction of dial systems has produced not potential or subjective loss, but actual or objective loss [fol. 732] in the presently operating manual equipment. The actual installation of the newer type hand set has produced such loss in the older desk set. Both were in use in such well developed forms 25 years ago or more. Until the companies commenced to install these items, obsolescence did not begin, and if the Company by developing other service or other economy in operation, should find it better no longer to make such installations, then such obsolescence would die out. The degree of obsolescence, therefore, is dependent upon the Company's own volition and it will progress uniformly or intermittently, according as their plans may call for one or for the others And when I say their plans, I have understood, and I think it is a fact, that the telephone companies all have a plan of development into the future, in which plan they predict the growth of the population, the change of communities, that is, obsolescence of neighborhoods, the change of wire centers or exchange buildings, the possibilities of growth in the use of the telephone by each individual subscriber and so on. They predicate the retirements of telephone buildings on such a plan, and incidentally I have found from time to time that their plans have worked out well in the past.

On the other hand, inadequacy, in contradistinction to obsolescence, is only partly due to the Company's own volition, and is partly due to expansion in the territories which they serve. Within the past two years the number of connected stations, as Mr. Holland has testified, and the number of calls per station declined heavily. At present the situation in Maryland is such that perhaps 5 years [fol. 733] will elapse before the number of stations again equals the number at the end of 1931. So that for something like that period of 5 years or more, possibly less, there will not be inadequacy in the plant. Now, inadequacy or inadequateness of the present plant, how it will be ap-

proached no one knows. The plant curve may soon rise again. But at what rate, no one knows. It may remain almost horizontal for an indefinite period to come. The rise may be progressive, or it may be intermittent. There is no regularity in the development of depreciation. It does not proceed in accordance with any mathematical law. But it is certain that until growth has taken up the slack in the present plant, there can be no inadequateness, and therefore currently, at least, there is no accruing depreciation in the plant due to inadequateness. Similarly, there is no currently accruing depreciation in the plant due to obsolescence. It should be noted, however, that obsolescence is currently acting to reduce the salvage value of some items of plant.

The current annual depreciation accrual rate represents the current charge against the present subscriber for the consumption of plant which he is using. Unless a single plant unit, such as a telephone station, has a certainly definitely predictable time of retirement, that is, a definite life in service or productive capacity in service, it is impossible to measure what is being consumed in any given single year or group of years less than the service life. However, the telephone companies calculate many depreciation rates upon a statistical basis. The Interstate Com- [fol. 734] merce Commission, in effect, defined the current accrual rate to be the net service value, divided by the average service life, as determined from a mortality or other study of previous retirements. They do not give that definition as such, but that is, in effect, the definition of it. This is applicable only to a large number of identical units in the group, having varying ages in the plant, where growth and retirements are reasonably stable. It is applied, of course, only in cases where the requisite mortality or other studies have been made. Where you have not those studies you can base it only on judgment. However, in all cases, unless there be a stable condition of growth and of retirements, that is, a stable condition for depreciation, only judgment can be used in determining the current annual depreciation rates. This judgment must and should be predicated upon past experience of the Company, upon a forecast of what will be the realized future experience and upon the long time development plan. Now, I am using service life as defined by the Interstate Commerce Commission, as the

period between the time of installation of the plant and the time of its retirement. And service value means the difference between the book cost and the net salvage value of the plant, with the exception of station apparatus, where it is the difference between the book cost and the gross salvage value.

Now, we have heard much of the so-called straight line method of accruing depreciation. Historically, the straight [fol. 735] line method got its name in contradistinction to sinking fund methods and annuity methods; but the Interstate Commerce Commission and, following them, the Maryland Public Service Commission had defined it very specifically as the plan under which the service value of property is credited to the depreciation reserve through equal annual charges as nearly as may be during its service life. If a unit of plant has a definitely predictable service life of 15 years or 20 years, then it is easy to set up each year 1/15 of 1/20 of its service value; or, if it has no net salvage value, 1/15 or 1/20 of its total cost.

But that is not the case for groups and units such as the telephone companies deal with. They are dealing with large numbers of poles, large numbers of spans of wire or of cable and so on. That being the case, they undertook—and I think Mr. Crunden deserves the credit for the remarkably complete, scientific and excellent studies that have been made in the past—they undertook to do it on the statistical basis. It is a well known fact that some units die earlier than the average and some die later. In order to meet this condition they adopted the actuarial studies such as are made for determining the life tables of the life insurance companies. Such studies presuppose that there are a large number of units of the same kind in the class being studied, so that the principles of statistics may be applied. They presume also that these units are as nearly identical as may be when you consider the natural variation of one physical unit from another, that is, a variation in [fol. 736] its quality, in its strength or in its general healthiness. They presume also that the conditions which surround plant, the conditions of growth and retirement and depreciation from all causes are stable. They express this last clause by using the words "stable statistical ratio". Professor Glover, in the Interstate Commerce Commission's hearings, very carefully explained that as the num-

ber of times the ace on a die would turn up out of a large number of throws, there being 6 sides to the die, and if you threw it 600 times you would expect to have the ace come up 100 times, provided enough experiments were made with it.

It is fundamental that we can not know the future life of any plant class except by that definition that I have already given. That is the current accrual rate is the net service value divided by the average service life, as determined from a mortality or other study of previous years' retirements. If the conditions hold, if the conditions prove identity and stability, then this definition has value. And if these conditions hold, then the service life is an almost unchanging life. From past studies an accurate forecast can be made, and from it an accurate estimate of service life and of salvage; and, therefore, an accurate computation of the rate currently being consumed. And this amount of plant value currently being consumed is what the Interstate Commerce Commission orders and those of the Maryland Commission specify shall be charged against the [fol. 737] present subscriber. And because constant conditions have been assumed, the charge made against those subscribers who use the plant this year can not differ against those who use it next year. This is what the Interstate Commerce Commission contemplated, and it was adopted by them after advocacy of it by the telephone companies themselves.

The I. C. C. recognizes that conditions from year to year do not remain the same. Hence the service life does not remain constant, and, therefore, the annual accrual rate must fluctuate; but they predicate the use of this method upon the premise that conditions will tend to average themselves over a period of years sufficiently long, by and large, so that the aggregate of the accruals to depreciation reserve will almost equal the net service lives of all the units which are being progressively valued.

I have attempted to use exactly the same methods that the Telephone Company uses, the methods that are prescribed by the I. C. C., after the A. T. & T. recommended to the Commission that they be adopted. My own ideas are in no way at variance with the rules and practice. On the other hand, the basis on which I am testifying recognizes a fundamental change in the conditions which surround the

plant, a diminution of the forces which act to cause plant retirements; and my testimony, therefore, is directed not at the method prescribed, but at the application of this same method to a new set of conditions. For the first time, apparently, in the history of telephone companies there has [fol. 738] happened an unexpected condition. For nearly two years this Company and, for over two years, other companies have experienced a heavy shrinkage in the number of telephones in use; and I believe it is nation-wide; a shrinkage for this Company amounting roughly to 10%. Heretofore, every year witnessed a growth, and from year to year the growth was nearly uniform; for periods of perhaps 10 years at a time the growth has been nearly the same, followed by other periods of somewhat more or somewhat less growth, but all showed an upward movement of the line in a chart which I present.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-20".)

This chart, Exhibit D-20, was prepared last year, and recently I made an extension to accord with Mr. Holland's recent extension on Exhibit D-18. I used Mr. Holland's chart because I wanted my chart to show at very short intervals of time, month by month, how the curve varied, but the data came from a different source than his, and you will notice that the two do not quite agree. There is a notation in the upper portion of my chart which says that my data came from the annual reports of the Company to the Public Service Commission. The note is a double note because their method of reporting was changed, in the year 1917, from the middle of the year to the end of the year and because the data was only annual data. I had no idea how it varied from month to month. I have drawn on the [fol. 739] long curve certain dashed lines indicating rates of curve, the first period commencing the middle of 1910 and ending in December, 1913, which is marked A. That showed an average growth of 10,400 phones per year. The next portion, which is marked B, extends from January, 1914 to the end of 1917. That is, you might say, the prewar period and showed 5,750 phones per year. The next period which is noted a little to the right as C is the period that extends from the beginning of 1918 to the end of 1931, and showed a growth of approximately 8,000 phones per year. There is a notation marked D in the middle of the

chart which is the average from the beginning to the end; that is, the Company showed a growth of 7,850 phones per year from the middle of 1910 to the end of 1931. Off to the right, in the upper right-hand corner, you will notice a portion marked E, which curve only carries to the end of 1932 because that is the latest date that I had from my source. However, this shows that stations were declining at the rate of 16,000 phones per year, approximately.

How the Company is going to grow I have no idea. The counsel for the Telephone Company asked me a long series of questions about this last June and at that time I made only one definite statement, which was that when the decline stopped it would be followed by a rounded trough and then the rate of increase that would commence at that time would be whatever they chose to suggest to me. I had no [fol. 740] appraisals. The only definite prediction I made at that time has been realized as shown on Mr. Holland's chart, with this exception; that after it occurred the growth flattened off again, and it has now picked up again.

There is a point about this chart, though: At the present time the plant is what it was 5 years ago. I think that has been testified to by Mr. Holland. If the Company from now on grows at the same rate that it did prior to the slump, then it will remain 5 years behind. If it grows at a less rate it will become more than 5 years behind; and if it grows at a greater rate it will be less than 5 years behind. So that for comparison purposes it is fair to say that it approximately will remain 5 years behind in its growth curve; that is for a period of 5 years there will not be inadequacy because there can be no inadequacy until they get to the point at which the plant is just adequate. Mr. Holland was questioned as to whether it was adequate or not, and I personally do not know, but I think it is a fair assumption that there was a small margin of plant, because it is good business, good judgment to have a small margin or excess of plant. It is only good business judgment, to be able to take care of tomorrow's customers when they want service, and that means that there must always be a small margin of plant, but that margin of plant is now enlarged by whatever the slump has caused. So even at the end of 5 years, we will say, the Company would only have arrived again at that same margin of plant that they [fol. 741] have had in the past. Since the growth was continuous there was every year a step forward in the ap-

proach to the point at which the plant would be inadequate; that is, each year there was some depreciation due to the approach to inadequacy, but conditions were sufficiently stable so that the studies made by Mr. Gompf each year showing past mortality gave accurate information as to the service life which could be expected.

Until we know more about the future it seems to me to be only fair to the present subscriber that he be charged for the consumption of plant which he is using on the basis of an extended life. The I. C. C. rules require that this expense be credited to the depreciation reserve in equal annual charges as nearly as may be during its service life, which contemplates that every one who has had use of the plant shall pay for the use of it. Only by a reasonably close approximation to the service life that will actually be realized can this equitable division be made. The Company recognizes this fact. They have extended the lives of some plant groups, as Mr. Gompf has already testified. Their extensions of service life, however, hold closely to their past experience, as indicated by mortality studies based on the average of the last three years, or turnover studies of the last 10 or 15 years. Such a method of averaging is excellent when conditions change but little from year to year, but such a method does not respond quickly to a sudden change of condition.

[fol. 742] The ~~basis~~ of my testimony, then, is that I make immediate allowance for a sudden diminution in the force of mortality, and do so by frank recognition of the fact that the Company has undergone an unusual and unexpected experience; and I do so by the elimination, by judgment, of the factors of inadequacy and obsolescence wherever they act and to the extent that they act. There should be no injury done to the Company, and the public should not be allowed the enjoyment of plant without proper compensation for what is consumed in service by it. The rates which I arrive at recognize that in fairness this must be so.

To summarize: There are two aspects of the problem; (1) that there has eventuated a sudden change of conditions, and the depreciation rates, to be fair and equitable to the Company and to the public, should be based upon the change, and (2) that I have attempted, by judgment, to evaluate the extent of the change that should be made in the rates.

First of all, I make no pretense of being a telephone man and, as Mr. Holland has said, what I know of telephone equipment is from study, from observation, such as I have been able to make.

Last spring I briefly inspected the exchange building at 5 Light Street, housing Plaza, Calvert and toll service. The building at 31st and Guilford Avenue, housing Chesapeake, Belmont and University, I also inspected. I briefly in-
[fol. 743] spected the Towson office and the small rented quarters at Cockeysville. This was in company with Mr. Holland, who also testified he inspected them. In recent years I have inspected no other office in the State. The appraisal by Messrs. Cummins, Frainie and Chew, the study of present physical condition by Mr. Sloan and the Company's depreciation studies, prior to June, 1933, were made available to me, and I have analyzed them insofar as they throw light upon the study which I have made. Certain of the testimony presented by the Company I have heard.

I prepared last spring, and present herewith, an exhibit showing the results of my study and my judgment of the currently accruing depreciation of the plant, by accounts as heretofore set up on the Company's books in accordance with the requirements of the Interstate Commerce Commission and the Maryland Public Service Commission, dated 1913.

(Thereupon there was offered in evidence by the defendants an exhibit marked "Defendants' Exhibit No. D-21.")

I believe that these figures in Exhibit D-21 are the same as Mr. Smith already used in an exhibit he presented. This exhibit contains eight columns. Columns 1 and 2 give the accounts by number and by name. Column 3 gives the cost values of these accounts and contains figures given me by Mr. Smith, the Chief Auditor of the Commission, and which I have not checked. Column 4 gives my judgment of the
[fol. 744] average service life in years, based upon the changed conditions as I have outlined them above, namely, that whereas physical deterioration, storm and other casualties, and public requirements are currently acting undiminished, there is, in general, no currently accruing depreciation due to inadequacy and due to obsolescence caused by changes in the art. Column 5 gives my judgment of the probable salvage value to be realized at the end of the service life, computed in accordance with the Company's

method. Column No. 6 gives, for four items, the percentage to be included under the Company's accounting method for depreciation of temporary facilities. Column 7 gives the percentage to be applied to each account for currently accruing annual depreciation. This column is derived by dividing service life given in Column 4 into the difference obtained by subtracting the per cent. of salvage, in Column No. 5, from 100%. The figures shown in Column 6, 1.5% for four accounts, should be added to the result of the computation which I just described. The last column, No. 8, then gives the products obtained by applying these percentages of Column 7 to the respective cost values in Column 3. The figures given for the service life of the plant covered by the various accounts are based upon my judgment and experience. Since I am not experienced in the construction and operation of telephone plants, I have looked at the subject from the point of view of my ex-
[fol. 745] perience in a number of industries, in various construction projects and from my knowledge of various materials. Physical life is a matter of common knowledge among experienced engineers, both from the actual responsibility for such materials and from careful observation. With buildings and structures in general I have had extended experience. In certain other items I have been able to draw from my considerable contacts; in some others I have been able to draw upon related experience.

Having formed a preliminary judgment of the several items, I next made a detailed study of the Company's experience as reflected in various publications which they have issued and exhibits which they have presented here and elsewhere, including, of course, the material that was submitted to the Maryland Commission last spring. I then added in the items of Column 6, which I had not considered before and which are an accounting matter. My next step was to consider the percentage of salvage. In some items this was determined from my own experience. In others I modified my own judgment in the light of the Company's experience, while in still others I used the Company's experience, weighting it in the light of the fact that my service life for such items is greater than the Company's past experience and might, therefore, be expected to have an influence on the salvage value itself. The factor of obsolescence must be considered in connection with certain items of plant, such, for example, as desk sets. Continued

[fol. 746] increase in the number of hand sets of French phones acts to reduce the market, namely, the subscribers' demands for the older desk sets, and it makes little difference which Bell companies are the ones to proceed with the increasing of the number of hand sets, because any one company by following this practice causes a certain amount of reduction in the demand and, hence, affects the salvage value for all other companies. Such matters also I have considered.

Under the head of public requirements I have chosen to include two factors: First, variation in the subscribers' demands or, as I have already described it, vagaries of the customer and, second, legislative interference. Discussing the first, every business must recognize and provide for the desires and demands of its customers. It is the practice of the A. T. & T. and its subsidiary companies to retire station apparatus and PBX's upon each removal from a given location and to make appropriate charges to the respective accounts. If in good condition, it is their practice to repaint or recondition and then reinstall the equipment in a new location at full value, the effect of which is greatly to reduce the actual or total service life by dividing it into several periods. And where I say actual or total service life I think I mean exactly what Mr. Holland has already testified to. The service life in one location is what Mr. Gompf has testified to. In order that my rates might [fol. 747] be properly comparable with the Company's rates, I have chosen to follow their practice. In such instances the physical life is not the dominant factor in determining service life, although it is the physical life which may finally retire the instrument if obsolescence does not first act as described above.

Now, second, legislative interference, so-called, concerns largely such outside plant as is affected by street and road widenings and abandonments, elimination of sharp curves and steep gradients, change of grade, relocation of street railway tracks, etc. The requirement that overhead plant be placed in underground conduit is of the same nature. These factors I have attempted to appraise in my figures. Casualties and storm damage are factors which remain undiminished. Storms recognize no changes of economic conditions, nor do casualties. However, the effect of storms on poles is more destructive to older poles than to new ones, and the progress which the Company has made in substi-

tuting creosoted poles for untreated ones, also the fact that a large number of new poles were installed in recent years because of extensive destruction of poles by recurrent severe storms, are elements which form part of my judgment. Also, the continued progress made in substituting aerial or underground cable for aerial wire, with correspondingly less chance of storm damage to wire and poles, are elements to be considered. My figures reflect these elements.

[fol. 748] With reference to the question whether the large reduction ordered by the Commission in the annual depreciation expense will have an unfavorable effect on the present depreciation reserve, I believe that the rate I have set represents accurately the conditions, and if they represent those conditions accurately they will have no adverse effect on the reserve. I made one study to check this judgment of mine—a study of the exchange pole account.

I took the Company's records as of 1932, which were the only data that I had, that is the distribution by ages of the different poles. For instance, as I recall it, nearly 10% of the poles in that account date back to the time of the Baltimore Fire, date back to 1906 or prior to that, and then in recent years there are a lot of poles that have gone into that account, I think in the years of bad storms. I am reciting that from memory, but the Company has a complete record here, I presume. I accepted their age distributions. I chose as a representative mortality condition their own experience as of 1927, 1928 and 1929, I believe. I then said that, beginning with 1931 and for 5 years, there would be a moratorium of obsolescence and inadequacy expressed mathematically. At the end of 5 years I then assumed that the conditions that existed before 1932 would be resumed, that is, the conditions of growth and obsolescence and inadequacy and so on. In other words, I merely stepped off a period of 5 years in which those elements would not operate and the other elements would operate. I find that at [fol. 749] the end of the 5 years there would be an excess in the reserve of 2.22%. That is, my rate of 4.4%, which is shown in Exhibit D-21 for Account 241, is sufficient to take care of the retirements in those 5 years and still add 2.2% to the reserve, increasing it in that amount. I know that the retirements for 1933 by this Company were not nearly as great as they had been previously. Therefore, the reserve was increased. It is a little bit dangerous to say that a year's retirements express the true answer, because it in-

volves something more than just that. But it certainly is indicative of the fact that because of obsolescence and inadequacy they did not need in 1933 to make the actual retirements that they had hitherto. The rates which I arrived at in the manner I have described were not in any way influenced or affected by the fact that there was such a large accumulation of reserve in 1933. I did not know it because the figures I am testifying to were prepared last April or May and I have not changed them, and the increase in the reserve for more than half of it has taken place since the figures were prepared.

[fol. 750] Cross-examination:

I believe that I have adopted completely the method of determining depreciation as set forth by the I. C. C. There may be some exception, but I believe I have generally. My determination that obsolescence and inadequacy are in a state of moratorium is not a change of method. I approve of what the I. C. C. has said in the section read to me from page 20 of the first revised edition of its Uniform System of Accounts, as follows:

"These percentage rates shall be based upon the estimated service values and service lives developed by a study of the Company's history and experience and such engineering and other information as may be available with respect to prospective future conditions. These percentage rates shall be computed in conformity with the group plan of accounting for depreciation and shall be such that the loss in service value of the property, except for losses excluded under the definition of depreciation, may be distributed under the straight line method during the service life of the property."

In speaking of the mortality studies made by the Company I did not mean to restrict these studies to 3 years. I knew that the Company has been making these studies over a period of time and that the mortality studies are made in 3 year bands. I was thinking about the fact that the latest [fol. 751] study would represent the last 3 years' experience.

I have the Company's study that was submitted to the Commission last spring; and in this study are given various tabulations and service life data. For instance, for exchange pole lines, the study shows an experience from 1916

to 1931, based upon mortality studies of 3 year periods which overlap each other—for instance, 1913 to 1915, 1914 to 1916 and so on. And I have all of that material. I have before me now Exhibit A-39, page 8. It is correct that the most recent experience shown there for 1932 is 11.4 years, and the figure given by Mr. Gompf there is 18 years.

I agree with the statements I read from the hearings before the I. C. C. in Case 14700, that is, I adopted the Company's method and the methods prescribed by the I. C. C. When I stated that inadequacy and obsolescence would not operate to determine the life of any of the present property for a period of 5 years, I used that as a general indication. I believe some such period as 5 years would be proper.

For main underground cable I used 100 years' life and 15% salvage, and for subsidiary cable 33 years' life and zero salvage, and those I weighted to arrive at 1.4% which is given in my exhibit.

If you take the loss charged to reserve in any period and divide this amount by the plant in service during the same [fol. 752] period, you would get the current retirement rate. I think that is known as the retirement ratio. Referring to the Commission's opinion on page 48, I do not know anything about the third column from the right which is called "Company's experience." If those figures represent the average retirement loss from plant over a period of 9 years without any consideration being given to average service life or net salvage, they would not be, on that basis, what is commonly known as retirement loss ratios. If the figures disclose that they represent the retirement for the year divided by the plant for the year, then, using Counsel's term, I would call it a retirement ratio, but of course, I know nothing about those figures.

Q. (Mr. Howard:) Did you try to find out what they did mean by spelling them over?

Mr. Cleveland: Why should he?

Judge Soper: Well, he disclaims any responsibility. Everybody else that has been on the stand disclaims responsibility and I think that is very clear.

The witness continued:

I approve the following testimony given before the I.C.C. by Mr. Crunden:

"In a growing plant the annual retirement losses will be less than the current true annual expense of depreciation, and the greater the rate of growth the smaller the retirement losses will appear in comparison with the current [fol. 753] depreciation rate, the reason being, of course, that in a growing plant there are new groups in operation on which depreciation is accruing which are not yet represented or are but slightly represented in the retirement losses."

For manual central office equipment I recommend an average service life of 50 years. As to what the over-all life would be: The over-all life of any particular exchange would depend just on how you had built it up in the method I have just described. However, for the moment, I am talking about the direction in which the line is going. I am not, at the moment, bothered about what is past. I am only saying that at the present moment we are headed northeast, although 5 years from now we may want to go north, and because of that I am using a service life that recognizes the fact that we are headed northeast and may later be headed north. It is in the light of that fact that I have used a service life of 50 years. I recognize that ordinary wear and tear is going to be replaced by maintenance, that if jacks wear out and have to be replaced they come out of maintenance, and if there are major changes in your central office equipment—by major I mean those things that the I. C. C. has described, which are so general that they are charged to the depreciation reserve and I realize that all of those things are going to happen—it was in the light of all that, having in mind that inadequacy and obsolescence were not going to happen, that I chose a service life of 50 years. [fol. 754] Now, the over-all life will be greater, but it depends entirely upon the specific exchange you are choosing to ask me about. I agree that the over-all life for this equipment will be more than 5 0years. I stated that the Company's experience would indicate 75 years, but that experience is no longer applicable under changed conditions. It would be something less than 75 years and something more than 50 years.

Before the Commission I fixed an over-all life of telephone buildings of 200 years. As to how I plan to replace a central office equipment to which I give a life of between 50 and

75 years in one of those buildings, in which I fix the over-all life at 200 years: I will say, for convenience, that I have given the central office equipment one-quarter of the life of the buildings which would mean that I might replace three times, one original installation and three reinstallations on that basis. Before testifying that it is possible to replace central office equipment in a building without interruption of service I had evidence that the Telephone Company in New England had done it. If, for instance, such a building were full, and by full I mean that it was full in the ordinary sense that the Company would use it, then of course there would be no space in that building in which to put any replacing equipment. But it has been done when changing manual exchanges to dial exchanges. The Back Bay Building in Boston had an addition put to it in order to take care of some of the extra equipment. If the office is full, if the [fol. 755] plant is just exactly adequate to the demands and remains so, then you would have to put an addition on your building in order to start putting in replacement equipment, but this Company has excess adequacy. I know that in some of this Company's exchanges, for example at 31st and Guilford Streets, Baltimore, I know that there is excess space in the building because I saw it. I know that the Company's men have told me that the toll office at No. 5 Light Street is already pretty full up and that the Calvert office, I think, is full. I appreciate those facts. However, I also appreciate the fact that some of these offices have excess space in them, and I had all of those things in my mind. In Connecticut there are a number of buildings that were built for manual exchanges and were later equipped for dial, and the Maryland Company has built buildings and used them for manual. The University exchange was built in 1915 and the dial system for University-Chesapeake was put in in 1926, so that that building was built 11 years before dial equipment was put in it. I do not know whether or not those buildings were originally designed for dial.

I stated that I used 100 years average service life of toll aerial copper wire and that in fixing this rate I took into consideration the effect of storms. Assuming that the Company has charged off in the last 10 years for loss of toll copper wire, due to storms, $357,000, or 2/5 of the investment in dollars in the 10 years, that is about 4% per year, which represents the Company's loss that is concentrated in sev-

eral years. There are two ways of treating such a loss: [fol. 756] The I. C. C. has made provision for extraordinary depreciation. They call it extraordinary maintenance. That is the same thing I referred to a while ago when I spoke of the Pacific Gas Case where extraordinary obsolescence occurred in the gas plant. You can set such things up and amortize them in the future if they have exceeded your expectations, and you can change your rate to recognize the new conditions.

I recall the storms in 1931 and 1932. I am saying there are two ways of taking care of things of that kind. There is one which is extraordinary maintenance, as the I. C. C. calls it. There is the other way of averaging your conditions, because you cannot set up past losses over future subscribers and still adhere to the I. C. C. requirements, that plant which is consumed shall be charged against the consumer who actually used it. The future consumer does not have the use of that wire that has been blown down by a storm in 1931, unless you are allowed to set it up under the extraordinary maintenance clause, in which event the future subscriber has to pay for it. All you can do with excessive storms is to say that you will recognize in your future rates that there will be future storms. And you can assume, if you want, that we are not always going to have serious storms in the future. You will recall I testified last spring that after you had a succession of serious storms the likelihood of having them again is not great. I understand you [fol. 757] have suffered in the past year considerably from sleet, in fact, one of the officers of the Company told me so the other day. Nevertheless, that does not change my judgment.

I testified regarding the existing depreciation of physical property in the Havre de Grace Bridge case. The side with which I was associated was setting up the reproduction cost of the bridge, and I was testifying as to what should be deducted for depreciation. My practice in that case and other cases of that type has been to inspect the property and report the actual physical deterioration present.

Redirect examination:

In answer to the Court's question whether I made any attempt to find out whether my figures did agree with the Company's figures if I had assumed ordinary conditions

and taken obsolescence and inadequacy into account: In the case of buildings I did. The figures that I used seem so horrifying to every one—200 years over-all life, 100 years service life—that I made a mathematical check, the result of which showed that taking my own studies and merely changing the weighting that I give to obsolescence and inadequacy, using the 13% salvage, which is what the Commission uses, and over-all life of 31 years for the structure, with less lives for the component elements of the building, [fol. 758] gives me 2.78%, which is the Company's figure. So that what I have done in that case, based upon the judgment that I think Mr. Gompf expressed and used, gives the same answer as the Company, as it should, because I was using the same methods.

I am working under the following definition of depreciation of the Interstate Commerce Commission:

"Depreciation means the loss in service value not restored by current maintenance incurred in connection with the consumption of prospective retirement of telephone plant in the course of service from causes which are known to be in current operation."

It is my understanding that the phrase "causes known to be in current operation" includes a change when conditions change. The I. C. C., or perhaps the Telephone Company, had wisdom enough before this definition was laid down to realize that there are always changes in service life. The Company has made something like 8 changes in their depreciation rates since 1913, and with these changes went varying service lives.

Now the I. C. C. very clearly does not tie up to a specific service life, nor to a specific statement that all of the elements of depreciation must be acting every year of service. [fol. 759] They clearly, to my mind, say that those that are currently acting this year must be considered this year, and those that are acting next year must be considered next year. But I can not for one minute believe that by any stretch of the imagination I can interpret that to mean that I must consider that all causes are acting every year. That is fundamentally what I have testified.

Recross-examination:

In the Havre de Grace Bridge case I believe I testified as follows:

"Q. May I ask you this question about depreciation, to see whether the views you have expressed are properly summarized in this way: Accrued or existing depreciation is a matter which can be seen and measured by judgment or inspection, is that not so?"

"A. Absolutely."

At that time the Supreme Court had specified that actual physical deterioration or depreciation was to be deducted from the rate base. And that is what I was doing. I was carrying out, as I saw it then and as I now see it, that decision of the Supreme Court.

Whereupon the defendants rested their case in chief.

[fol. 760] Whereupon evidence on behalf of the plaintiff was presented in rebuttal as follows:

Edward V. Cox, a witness of lawful age, heretofore produced and sworn on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, Plaintiff, resumed the stand in that behalf, in rebuttal, and testified as follows:

Direct examination:

(Thereupon there was offered in evidence by the plaintiff exhibits marked "Plaintiff's Exhibits Nos. A-50, A-51 and A-52").

Exhibit A-50 shows the trends of Western Electric prices for apparatus and equipment, also the trend of Western Electric prices for their total sales of equipment, lead covered cable and supplies. Both of these curves are shown in comparison with the trend curve of the United States Bureau of Labor Statistics for the Wholesale Commodity Price trend. These curves start at the year 1914, which makes the arbitrary assumption that all of the elements were in harmony at that time, which may be unfair to particular elements. The situation at 1930 is interesting. The

increase in prices occurring at November, 1930 is shown for apparatus and equipment on the red line. However, the decrease in price for lead covered cable and supplies was more than sufficient to overcome that increase in apparatus, the result being that the total trend, as shown by the green line, is downward even in that year.

Exhibit A-51 merely restates the figures from the preceding chart, basing them on the year 1923 as 100. How-
[fol. 761] ever, there is added on this chart an additional comparison, which is shown in blue, namely the trend of prices of independent manufacturers of telephone apparatus to the general trade, the data for this being taken from the exhibits which I introduced earlier. It particularly relates to Exhibit A-23. If instead of taking the year 1923 as the base of 100 we had taken the year 1921, then the four curves on Exhibit A-51 become those shown in Exhibit A-52. These exhibits bring out the different picture that one gets from picking different years as a starting point and bringing the curves together at that point. In this case, taking the year 1921 as the base as shown by Exhibit A-52, the curves start together at that year and they end up together in the year 1934, that is, the Western Electric curves and the U.S. Labor Bureau curves are at the same point in 1934, but the curve for the general trade, the blue line, is substantially higher. Of course, these trend curves do not show the relative prices themselves, that is, the prices to the general trade in comparison with the Western Electric prices to the Associated Companies. The general trade prices have been higher throughout all of this period.

Cross-examination:

The blue line on Exhibit A-51 and A-52, indicates the competitors to whom I referred in my original testimony. It is true that they have not sufficient plant to furnish the
[fol. 762] needs of all of the associated companies, and most of them are specialized to a considerable extent.

Answering the Court's question and referring to Exhibit A-52, it is correct that with 1921 as the base, the Western Electric line and the Bureau of Labor Commodities line come out together on February 1, 1934. The final result depends on the year you start with as the base of 100. It is not intended to indicate that the absolute

prices of Western Electric and All Commodity prices in actual practice are the same on February 1, 1934.

The point of the comparison made in these exhibits is that the Commission has said that the Western Electric price trends for the years 1929 and thereafter did not follow the general commodity trend, and drew attention to the fact they apparently had opposite tendencies. What I have done in Exhibit A-52 is merely to chart these curves back to the year 1921 and show that if you make that year the starting point instead of 1929, you find that the Western Electric curves had decreased prices very considerably in earlier periods, when the general commodity prices were running along level. Effect is given to the decrease in those earlier years, and the Western Electric prices and the All Commodity price trends coincide at the end of the period. I think this chart does tend to show that when times are good and everybody else's prices are high the Western Electric prices are more modest, and when times are bad and everybody else's prices are low that the Western Electric Company's prices are higher. If the Western Electric Company had followed the United States Bureau of Labor Statistics All Commodities trends, during those [fol. 763] years which are the heavy years of output to the Bell System companies, the prices would have been correspondingly higher. The Bell System companies have gotten the benefit through all those years of the decreased prices of the Western Electric Company.

[fol. 764] J. KENNETH CROSLAND, a witness of lawful age, heretofore produced and sworn on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, Plaintiff, resumed the stand in that behalf, in rebuttal, and testified as follows:

Direct examination:

I have a copy of Exhibit D-8, page 2, filed by Mr. Smith. As I understand this exhibit, it compares the profits of the Western Electric for each of the years 1927 to 1932 with the property and investments, less the depreciation reserve, which results in the various percentages by years shown on the last line of the exhibit, and an average of

13.29% for this period of years. In my opinion, a relationship of that kind is not an accurate one or a logical one, and I do not believe it is the usual method used to determine the profits or the earnings or the rate of earnings of a company. It seems to me that the sounder basis for determining that would be to relate the earnings of the Company to the money which has been invested in the Company and which has been used in earning these profits.

The elimination of such things as merchandise, cash and receivables from the investment to which the profits are related, results in creating a feature of non-comparability because, for instance, in 1927 there have been eliminated from the Western Electric total assets in this exhibit 62% of its total assets, by taking merely what is called here the property and investments, less the depreciation reserve. For the whole period of these years on the average this [fol. 765] practice has resulted in eliminating about 50% of the Western Electric's assets as compared with 40% of the assets of the 442 companies used in the exhibit.

There is a very definite reason why, in the Western Electric Company, the assets which have been eliminated form a greater relation to the total, and it is this: That the Western Electric Company carries on not only a manufacturing business in which it must have, of course, a stock of raw materials with which to work, but also it carries on its distribution business, maintaining some 29 houses throughout the country, so that it can give service to telephone companies. In performing that service it has got to have stocks of merchandise. It cannot serve the companies by manufacturing from hand to mouth. As an instance of some of the companies in the total of 442 whose current assets—in other words, merchandise, cash and receivables are in small relation to the total assets, there are copper companies, lead and zinc companies, the oil companies, the paper and paper products companies, railroad equipment companies, steel and iron companies. These groups, together with a few other small ones, have current assets of only about 31.5% of the total companies' assets as compared with the Western Electric Company of 59%.

As to whether Standard Statistics issue information as to any other method of computing these percentages and whether that is shown in their bulletins: I have the Stand-

ard Statistics Bulletin for 1932, which gives a total for 442 industrial companies, from which I can check the figures which appear on Exhibit D-8, page 2, and upon which [fol. 766] also is shown a total invested capital and a percentage earned on that figure which, of course, is a considerably lower figure than is shown on ths exhibit. That total invested capital represents the total assets of the Company less the depreciation reserve and less the current payables. It includes also all their inventories and receivables and cash. I have provided an exhibit showing the percentages earned on this basis.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-53".)

The percentages shown on Exhibit A-53 have all been taken from Standard Statistics bulletins for the years 1927 to 1931, inclusive. For 1932 I used a later issue of the bulletin which included 433 corporations rather than 442. I did not have the particular sheet available showing the 399 corporations which Mr. Smith stated he had used. Exhibit A-53 takes in all the assets, including those excluded in Exhibit D-8, page 2, and the Western Electric has been put on a comparable basis with the other companies.

As to the comparability of the companies included in this exhibit: I made a study in the time I have been permitted to devote to it, and have come to the conclusion that, apparently, there has not been any study made to place this exhibit on a comparable basis. It is merely a comparison of the Western Electric Company results with 442 industrial companies of all kinds. As an instance of some of the groups of industry there included, which would have, I think, little or no manufacturing interests, would be the [fol. 767] following: Coal companies; dairy products; candy companies; miscellaneous food products; meat packing; copper companies; lead companies; miscellaneous mining and smelting and oil companies; leather and tannery companies; retail trade; shipping; steel and iron companies; sugar producing and refining companies; textiles, theaters and motion picture companies; advertising and publishing companies; aircraft including the transportation companies; property owners in building groups; miscellaneous service companies. Of the 442 companies listed in this Standard Statistics Bulletin for the year 1931, the

groups I mention comprise 293 companies, 66% of the total. That number had 74% of the invested capital shown in the Standard Statistics Bulletin and 42% of the earnings, and the earnings of those groups was 1.6%. For 1932 these groups comprised 62% of the number of companies, with 73% of the invested capital and 40% of the earnings. Their return for 1932 was 4/10 of 1%.

In the interest of a sounder comparison I endeavored for the years 1931 and 1932 to determine what the effects would be if we eliminated those companies. I have not had time to do it for the other years, but I have no reason to believe that the conditions would be materially different. If in 1931 we eliminate these companies to which I have referred, the percentage earned on the capital investment as shown on this exhibit in 1931 of 2.8% would have been increased to 6.3%, compared with the Western Electric Company return for 1931 on the same basis of 5.6%.

On the same basis for 1932 the 8/10 of 1% for the whole group of companies would have been increased to 1.7%, [fol. 768] which profit compares with the loss for the Western Electric Company for that year of 3.4%.

As to Exhibit D-8, page 6, entitled "Earnings of the American Telephone and Telegraph Company on its Investment in the Western Electric Company since 1923": If it is the intent of this exhibit by showing the return to the A. T. & T. as stockholder of this company, that the Western Electric Company is a profitable company, I believe that the exhibit is misleading and erroneous for the following reasons: In 1927 there is included in the $56,250,000 dividend, $48,750,000, which was a special dividend which the Western Electric Company declared out of its non-Bell earnings from 1881 to 1927, and those profits included the profit of $15,000,000 from the sale of our foreign business, the International Western Electric Company. Of the $48,000,000 that has been here included, $35,000,000 of that was earned by the Western Electric in the years prior to 1924. So, obviously, that can not be used as a measure of the Western's profits for this period from 1924 to 1932. Also, in this exhibit in the second column, headed "Investment in the Common Stock by the A. T. & T.", are shown figures which represent the cost to the A. T. & T. of its stock in the Western Electric Company, but do not include anything at all with respect to the earnings which have been left in

the business and which are at the risk of the business and which we believe are entitled to earn a return. The amount of such earnings left in the business was $24,000,000 at the beginning of this period. If that figure be included for 10 years there would be at least $240,000,000 to be added to [fol. 769] the $826,000,000 shown on the exhibit. Then, in addition to that there have been earnings taken into surplus each of those years since that time which have not been given any consideration in the $826,908,000.

If we eliminate the dividend of $35,000,000 that should not be included, and if we include in the base on which the return is figured the surplus which has been allowed to remain in the business we come to percentages which are now 9% instead of 16.93% and 9.5% instead of 17.59%. Of course this does not represent either the total profits of the Western—that is only the stockholders' profits. Because we have bonds and notes outstanding, there should also be considered the earnings of the bondholders and noteholders during this period, which has been about 5%.

If the 9.5% or the stockholders' return be combined with the 5.5% or about 5%, the bond and noteholders' return, we get an average of about 8%. That 8% does not give any consideration to the fact there are other moneys in the business represented by capital reserves, such as depreciation and other reserves, which if taken into consideration show a return of the Western Electric Company on all the money in the business during this period of approximately 6%.

Cross-examination:

The earnings out of which the special dividend of $48,750,000 was paid were on non-Bell business from 1881 to 1927. It is in the surplus of the Company as of December 31st, 1927. Answering the question as to how a profit can [fol. 770] suddenly appear in 1927 if it is earned over a period of time and not be reflected in the books in previous years, the answer is that this is not a Western Electric profit on this exhibit but shows, as I understand it, the stockholders' income. Since the Western Electric distributed those profits in the form of a dividend in 1927, it would of course be income to the A. T. & T. in 1927, but that would be no indication of when that money had been earned. It

had been earned since the Company started and was left in surplus until it was distributed through this dividend.

I did not intend to make the statement that the comparison made by Mr. Smith on page 2 of Exhibit D-8 of the Western Electric Company with the 442 companies taken from Standard Statistics was not on a comparable basis. My point was that it did not include all the assets devoted to the business. The total invested capital can be arrived at by adding up the liability side as well as the asset side. The percentage returns shown upon page 2 of Exhibit D-8 are the relation of the profits to the figure on the top line, and they appear on the Standard Statistics sheet. As to whether in adding up the same items from the balance sheet of the Western Electric I would arrive at a figure of $123,000,000, showing a return of 15.7%, instead of a figure of $186,000,000, showing a return of 10.3% in 1927: I say that in adding up the liability items of the Western Electric Company consideration must be given to the borrowings which the Western Electric Company has, which are permanently invested in the business and which are described in the pamphlet by Standard Statistics Bulletin as long-term indebtedness. This is necessary because the Standard Statistics bulletin very clearly states in the [fol. 771] detail sheets that that item represents not only funded debt but long time debt, and that is what these Bills Payable of the Western Electric are, and for that reason they must be included to get a comparative statement.

As to whether I know for what term of borrowings are the "Other Liabilities" on the Standard Statistics sheet: I do not know all about those 442 companies, but if there were in these 442 companies any long term borrowings, they would not be, in my opinion, reported as "Other Liabilities"; they would be under "Funded Debt" as used by Standard Statistics. These "Other Liabilities" may include 30 and 60 day paper, but that is not a long time debt. As to whether I know that as a fact: I said before I am not familiar with all the figures of all these companies. But, reading this statement of Standard Statistics, it would be my opinion that the Standard Statistics would not include under "Other Liabilities" any long term debts. If they did that they would not be showing the correct picture. The bulletin does show that they eliminated from "Other Liabilities", long term debts.

I made up my figures for the Western Electric on the basis that, in my opinion, the Standard Statistics is made up on. Standard Statistics deducted "Other Liabilities" and I deducted "Other Liabilities" which, in my opinion, are comparable to what they deducted. In the Standard Statistics Bulletin is a column headed "Funded Debt and Long Term Debt" and it represents the figure included by the Standard Statistics as part of the investment. I do not know the length of time for which evidences of such debt are issued as I have not examined the paper in all of these 442 companies.

As to the Pension Fund Notes of the Western Electric [fol. 772] Company, I did not deduct that because the borrowings from the Trustee are a permanent investment in the business. Pension fund accruals are charged to operating expenses in the year in which they accrue. As to why, if pension accruals are included in expense, pension fund notes are not deducted from the base: The one has nothing to do with the other. One is an expense of operating the business, while the other is that we have borrowed money from the Trustees on a long time basis, and the moneys represented by those borrowings are in the business permanently. None of the money which we have borrowed from the Trustees over this entire period has been taken out of the business up through 1932. That is certainly proof positive, in my opinion, that it is not current payables but a permanent indebtedness. If a note is a demand note, but in essence it is not a short term borrowing, it must be included in the investment on which one is determining a return. In essence these pension fund notes are long term indebtedness. The fact that technically they are covered by demand notes, does not mean that they should be considered as a temporary borrowing in determining money in the business. In the 1929 Annual Report of the Western Electric it will be seen that notes to the trustee of the pension fund are shown, not as current liabilities, but on a par with funded debt, in other words, these borrowings take the same position in a balance sheet as permanent capital stock and funded debt.

I want it understood that I have not made any adjustments for the intention of showing a more favorable picture for the Western Electric than these other companies; but the facts are that putting these companies on a strictly

comparative basis, that is, taking the assets devoted to the [fol. 773] business, less the depreciation reserve, less the current accounts payable, current payables, we arrive at the percentages that I have shown in Exhibit A-53. I explained one of the reasons why the percentage of the Western Electric Company is higher than these others, and I pointed out that the 2.8% in 1931 for the 442 companies, if adjusted to exclude companies which have very little or no manufacturing activity, would be materially increased. This list of 442 companies was selected by Standard Statistics, not as manufacturing companies, but as industrials. That may be proper for their purpose, but for our purpose we want to know the basis on which their manufacturing activities are something similar to the Western Electric Company. We want to make a correct comparison of companies which do compare in their kind of activities with the Western Electric.

[fol. 774] HARRY C. GRETZ, a witness of lawful age, heretofore produced and sworn on behalf of The Chesapeake and Potomac Telephone Company of Baltimore City, plaintiff, resumed the stand in that behalf, in rebuttal, and testified as follows:

Direct examination:

The average return to the Company on the Average Plant in Service for the period from 1914 to 1923 was 5.25%. The range was from 3.59% to 6.02%. This is on average plant in service, and not on the value of the property. I have no figures for value during those years. The weighted average for the 20 years of 1914 through 1933 on the same basis is 5.92%. As to the Average Plant in Service, which I used for the base, in 1914 it was within $50,000 of the fair value found by the Commission. In 1923 it was considerably less than the fair value found by the Court and used by the Commission. So that I would think over this whole period the Average Plant in Service probably understates the fair value rather than overstates it.

During the course of the proceedings the question was discussed as to the computation of annual depreciation expense on value and as Mr. Smith stated, in the past, de-

preciation expense had not been based on value when fixing rates. As to the rate of return for the year 1925, if when the Commission fixed rates in 1925, depreciation expenses had been computed on the value of the property: On the basis of the Court's value of the property brought up to date in the same method that the Commission used the annual depreciation expense for 1925 would have been $1,910,000 instead of $1,635,000, as based on the cost of the property. The net telephone revenues for 1925 would have [fol. 775] been $1,762,000. The Court's value, as brought up to date in the same manner as the Commission followed, would have been $34,925,000. The rate of return for 1925 would therefore have been 5.05%, instead of 6%, or slightly over 6%, which the Commission stated the Company should have under the specific rates.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-54".)

Exhibit A-54 is a copy of a chart, prepared for the use of the Commission in the case before them, and filed in that case, showing the weightings of the various items entering into the several index series used in this case.

(Counsel for the Telepohne Company stated that in compliance with the request made of Mr. Smith while he was on the stand, Mr. Smith had furnished to the Company copy of the data which he had received from the Interstate Commerce Commission and used in this case.)

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-55".)

Exhibit A-55 contains the information used by Mr. Smith and furnished to him by the I. C. C. together with a summary account sheet used by the I. C. C., which sets out the railroad accounts. Pages 3, 4, and 5 contain the data furnished to the Company by Mr. Smith, as having been used in the preparation of his exhibits. On pages 3 and 4 are shown the index numbers by years and by account numbers for Region III or the Central Eastern Region. Page 5 shows the types of items in Railroad Account 26, Telegraph and Telephone Lines, for which the Interstate [fol. 776] Commerce Commission determined index numbers. It also shows the index numbers for each one of

those items, and the weighting for each in the composite index.

I have included in Exhibit A-55, pages 7 and 8 which show the basic figures from which the I. C. C. developed their index numbers for those items on page 5. I obtained these basic figures from the I. C. C. Page 7 shows the dollar amount for each one of the items, and page 8 the index numbers in relation to the base of 1910-1914, resulting from the dollars on page 7.

As to whether the methods followed by the I. C. C. in developing and applying its index numbers as discussed by Mr. Smith in his testimony is comparable to the method the Company has followed in ascertaining the reproduction cost of outside plant: Substantially it is. The I. C. C. took units of property for all of which they had unit costs. Those costs are prepared as of a base period 1910-1914. Then they took samples of the items in the particular account as we have done, though I think our samples are relatively a larger proportion of the particular accounts than the I. C. C. used. Instead of getting a ratio of the total items to the samples, which we did, the I. C. C. applied the index numbers to the 1910-1914 costs, but the results are the same in either event.

With reference to the Court's question about the difference between current maintenance for 1933 and 1934, Exhibit A-43 shows the increase in 1934 over 1933 was $136,000. Without going into the individual accounts, I think we can summarize the chief difference as being brought about by the reduction in the assigned time off for the maintenance forces. When we were before the Commis-
[fol. 777] sion, the average time off was about 20%. In the latter part of last year the assigned time-off was reduced, and we expect throughout 1934 the employes will be working on a 5 day week when normally they would work 5½ days, making the assigned time off about 9%. On Exhibit A-6, the year 1932 is shown on the basis of the 1933 classification of accounts and the difference between the figure on Exhibit A-6, of $2,107,000 for 1932 and the figure appearing on Exhibit A-5 for the same year of $1,922,000 is brought about by changes in the Classification of Accounts.

(Thereupon there was offered in evidence by the plaintiff an exhibit marked "Plaintiff's Exhibit No. A-56".)

Exhibit A-56 is a comparison of accounts of the Company's evidences of value with the only comparable suggested value to which Mr. Smith testified. The exhibit shows on its face the source of the data appearing thereon.

Cross-examination:

The figures which I gave showing the earnings of the Company from 1923 on were based on the Average Plant in Service without deducting depreciation and without including general equipment and construction work in progress or working capital or going value. I do not know what the figures would be less depreciation. I have explained that the Average Plant in Service, if anything, understated the final fair value rather than overstated it, and called attention to the two complete valuations that were made by the Commission and this Court in 1914 and [fol. 778] 1923. This means that, in my opinion, the Company has, on the average, earned less than 6% on the fair value of the property ever since 1914.

In answer to the Court's question with reference to Exhibit A-54: The Commission used these several outside index numbers without any reference to what the make-up of the component data was. This exhibit was an attempt to show the kinds and amounts of materials and the amount of labor, if any, which were back of the index numbers which the Public Service Commission used. This data was presented to the Public Service Commission before it made use of the index numbers.

(Thereupon the Court asked counsel for the Commission whether there was anything to show how the so-called weighted combination was weighted by the Commission, or in other words, why the Commission attributed a value of 4 to the All Commodities Index, a value of 1 to another index, a value of 1½ to another index, and so forth. Counsel for the Commission stated that there was nothing, other than the statement of the Commission in its Opinion.)

The witness continued:

The exhibit does not have anything to do with what the Commission did in attributing its varying weight factors to its several indices. It has no relation to the weight given to any index series by the Commission. It is intended to

show the various items entering into the make-up of the index series specified and the respective weighting of those [fol. 779] items in each index.

(Testimony closed.)

Whereupon the plaintiff rested its case in rebuttal.

Whereupon the defendants rested their case, which was all of the evidence offered or received in the hearing of the above entitled cause.

[fol. 780] IN UNITED STATES DISTRICT COURT

[Title omitted]

STIPULATION AS TO FINAL DECREE—Filed April 3, 1934

It is hereby stipulated and agreed by and between the parties hereto by their respective Counsel that this cause is hereby submitted for final decree, and not merely for determination of the application for interlocutory injunction only, upon the evidence adduced and hearing which has been had therein.

Dated this 3rd day of April, 1934.

Charles McH. Howard, Raymond S. Williams, R. A. Van Orsdel, T. Baxter Milne, Attorneys for Plaintiff.

Richard F. Cleveland, John Henry Lewin, Herman M. Moser, Attorneys for Defendants.

THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY OF BALTIMORE CITY, a Corporation,

Plaintiff.

vs.

HAROLD E. WEST, J. FRANK HARPER AND STEUART PURCELL, the Persons Constituting the Public Service Commission of Maryland,

Defendants.

IN THE

District Court of the United States

FOR THE

DISTRICT OF MARYLAND.

IN EQUITY.

No. 2240.

Before SOPER, Circuit Judge, and WILLIAM C. COLEMAN and CHESNUT, District Judges.

CHESNUT, District Judge:

The Public Service Commission of Maryland by order dated November 28, 1933, required the Chesapeake and Potomac Telephone Company of Baltimore City (a Maryland corporation hereinafter called the Company) to file new rate schedules effective on and after January 1, 1934 which would result "in a reduction of approximately $1,200,000 in the gross annual revenues of the said Company." It was stipulated that the effect on net revenues of the Telephone Company would be a reduction of $1,000,000.

The Commission estimated that the Company's net revenue for 1933 would be $3,353,793, which would be sufficient to allow the Company a return of 6% on the fair value of its property of $32,621,190, as determined by the Commission. The Company's *computed* net revenue for 1933 was $2,527,961; the difference lying principally in the amount of the depreciation expense allowance which the Company determined to be $2,166,211; but which was estimated by the Commission at $1,352,284. On the basis of the Company's book accounts for 1933, the effect of the order was to require a reduction in net revenue of about 40%. On the Commission's estimate of net revenue the deduction required was about 30%. The Company's net revenues had already declined 23% from their peak in 1931, $3,287,265, to $2,527,961 in 1933, due to the general business depression. The combined effect of the economic condition and the Commission's order is to reduce the estimated net earnings for 1934 (as we find them) as compared with 1931, nearly 50%.

On December 13, 1933, the Telephone Company filed its bill in equity in this case to enjoin the enforcement of the Commission's order on the ground that the reduction required was violative of the constitutional guarantee of due process of law contained in the 14th Amendment to the federal Constitution, and the new rates so ordered would be confiscatory of the plaintiff's property. The bill alleged that under the reduced rates the Telephone Company would not be able to earn so much as 3% on the fair value of its property which it alleged had much greater value than that fixed by the Commission.

The bill prayed for a preliminary as well as a perpetual injunction. A restraining order was passed and became effective after the Telephone Company filed a bond

with surety in the amount of $300,000 which provides for the refund to telephone subscribers of any rates paid by them in excess of the sums ultimately determined to be properly chargeable to them, if a preliminary injunction shall not be granted to the plaintiff. Thereafter a three-judge court was constituted in accordance with the requirement of United States Code, Title 28, sec. 380, and the case assigned for trial at the earliest practicable date in view of prior engagements of court and counsel. The hearing has now been held on the pleadings and very full proofs and the case has been submitted by counsel for decision on the application for preliminary injunction and also for final decree on the merits. The question presented can be simply stated—Does the order in effect confiscate the plaintiff's property by allowing it less than a fair return upon the fair value of its property. The solution of the question necessitates a finding from the evidence of three controlling facts: (1) what is the fair value of the plaintiff's property used and useful in the public service, and (2) what is the fair rate of return on the value of the property so found, and (3) what net revenue will the plaintiff have under the reduced rates ordered by the Commission.

The governing principles of law for the determination of these two questions are thoroughly well settled by numerous recent decisions of the Supreme Court. The public is entitled to adequate service at reasonable rates. Cor-relatively the Telephone Company is entitled to a fair (non-confiscatory) return upon the fair value of its property. The valuation must give due weight to present rather than past values, but the determination of present value is not an end in itself but rather to afford ground for a prediction of future values upon which to determine valid future rates. *Los Angeles Gas Co. v. R. R. Commission*, 289 U. S. 287, 311. It is also well settled

that in arriving at a fair valuation due allowance must be made for existing depreciation; and in determining the rate of return the Company is entitled to a rate equivalent to that "on investments in other business undertakings which are attended by corresponding risks and uncertainties"; and "it should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties"; and also that "a rate of return may be reasonable at one time and become too high or too low by changes affecting opportunity for investments and changes in the money market generally." But the Company "has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. Furthermore it is clear that this court does not sit as a board of revision but only to enforce constitutional rights." The only question here is whether the rates fixed by the Commission are confiscatory. Upon that question the complainant has the burden of proof and the court should not "interfere with the exercise of the state's authority unless confiscation is clearly established." *Bluefield Water Works v. Public Service Commission*, 262 U. S. 679, 692, 693; *Los Angeles Gas Co. v. R. R. Comm.*, 289 U. S. 287, 304, 319; *United Railways v. West*, 280 U, S. 234, 250.

We approach the consideration of this case in the light of these principles. The primary question in this, as in all rate cases, is the determination of the fair value of the Company's property. This must be determined from the evidence. Before analyzing it a further consideration should be stated.

The Maryland Commission has jurisdiction over the intra-state property and revenues of the Company and

not over its inter-state business, the latter being subject to the jurisdiction of the Interstate Commerce Commission (49 USC, sec. 1). In the Commission's order, dated November 28, 1933, and its accompanying extended opinion, the property of the Telephone Company and its revenues both inter-state and intra-state were treated jointly and not separately, but by stipulation of counsel and express agreement of the Public Service Commission of Maryland and a formal amendment of the original order, it is agreed that the property of the Company devoted to intra-state service is 85% of its whole property, and similarly that the net revenues applicable to intra-state operations are 85% of the whole net revenues of the plaintiff; and that the original order of the Commission was intended to effect a reduction of not less than $850,000 (instead of $1,000,000) in the net annual revenues of the plaintiff derived from intra-state business; and it was further agreed that the amended order shall be effective *nunc pro tunc* as of the date of the original order. Therefore, while it is recognized of course by all parties to the case, that its ultimate determination must depend upon a finding of the fair value of that portion only of the property which is devoted to the intra-state business and the revenues resulting therefrom, nevertheless it will be more convenient in the analysis of the evidence in the case to consider the whole property and the whole revenues of the Company, as that was the basis on which the figures were originally submitted to and discussed by the Commission, and likewise here. By reason of the stipulation the legal result will be the same whether the property and revenues be considered as a whole or the intra-state portion of the business be considered separately.

THE FAIR VALUE OF THE PROPERTY—THREE STANDARDS CONSIDERED.

The evidence in this case affords three separate methods or standards of depreciated valuation for the property of the Company. As of December 31, 1932 they are (without working capital), as follows:

The Commission's valuation	$32,610,327.00
Company's valuation	46,351,119.00
Book or historical cost of Company's property	39,761,966.12

The nature of book or historical cost needs no elaborate explanation. Actual "original" cost may of course be different from recorded book cost in some cases, but there is no such distinction here, where original or book or historical cost all have the same meaning. It represents the actual amount charged to capital on the books of the Company for plant and fixed assets devoted to the public service (after deduction for retirements) during the whole history of the Company which covers a period of 50 years, although 90%, approximately, of the Company's property has been acquired since 1910. The Company's accounts have been kept in compliance with the regulations and orders of the Interstate Commerce Commission since 1913 and the Company itself has been subject to Commission regulation in Maryland since 1910.

The method used by the Commission in arriving at its valuation was to take the rate base as determined by a three-judge court in this district as of December 31, 1923 (*C. & P. Tel. Co. v. Whitman*, 3 Fed. (2d) 938), together with the annual net additions to the property since

that date as recorded on the books of the Company and to re-price or re-value, as of December 31, 1932, the said sums according to a so-called "index translator" of prices determined by the Commission to represent the fair value trend of prices for general commodities and construction work from 1923 to 1932. The method will be described in more detail hereafter.

The basis of valuation put forward by the Company is the familiar well-known "re-production cost new less depreciation" theory of valuation.

No single one of these three methods of valuation is an exclusive or final test. But the amounts arrived at by the respective methods are all relevant facts for consideration together with other relevant facts appearing in the evidence. The determination of fair value for rate-making purposes is necessarily a judicial function which calls for "a reasonable judgment having its basis in a proper consideration of all relevant facts." *Minnesota Rate Cases*, 230 U. S. 352, 434; *Ga. Ry. & Power Co. v. R. R. Comm.*, 262 U. S. 625, 630; *Bluefield Water Works Co. v. Public Service Comm.*, 262 U. S. 679, 690; *Los Angeles Gas Co. v. R. R. Comm.*, 289 U. S. 287, 306.

The Supreme Court has been careful, in view of its distinctive function in the enforcement of constitutional rights, not to adopt any single or definite artificial rule or formula for invariable application in all cases. The judicial determination of what constitutes fair value must be determined from the special facts and circumstances of each particular case giving such relative weight to the several theories or methods of valuation in any particular case which the circumstances thereof properly require. In the comparatively early case of *Smyth v.*

Ames, 169 U. S. 466, (still a leading authority in the field of utility rate regulation), it was said (page 546):

> "And in order to ascertain the value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property. What the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience. On the other hand, what the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services rendered by it are reasonably worth."

In later cases it has been appreciated that of the several matters for consideration here outlined relatively little weight can be given to the market value of the Company's securities and its earning capacity under existing rates because these considerations necessarily beg the question to be determined. It has resulted therefore that in most cases of such valuation there are available only the actual book or "historical" cost of the property and the estimated cost of its reconstruction new. And of these two considerations the one more frequently applied in modern rate cases has been the estimated cost of reproduction. The reason for this is that in most cases the book or historical cost data are either not complete or are unreliable or have been incurred under conditions dissimilar to those existing at the time of the rate inquiry. But where actual cost data are available and reliable and represent the actual expenditures for the

public service under conditions reasonably approximating those prevailing at the time of the rate inquiry, cost has been given very great weight in determining present value. Thus, in several of the most recent cases in the Supreme Court the valuation adopted or approved has been substantially book or historical cost rather than reproduction cost. *Los Angeles Gas Co. v. R. R. Comm.*, 289 U. S. 287; *Clarks Ferry Bridge Co. v. Public Service Comm. of Penna.* (decided February 5, 1934), 291 U. S. 227; *Dayton P. & L. Co. v. Public Utilities of Ohio* (Sup. Ct., April 30, 1934).

BOOK OR HISTORICAL COST.

After consideration of all three valuations, and the testimony in the case with relation to them respectively, and all other relevant evidence bearing on valuation, we reach the conclusion that the fair value of the property of the Telephone Company used and useful in the public service, considering the Company as an efficiently managed and going concern with its attached business, without otherwise adding a specific sum for going value, but including an allowance of $1,600,000 for working capital, is $39,541,921.27, as of December 31, 1933. In reaching this conclusion we have given special weight, under the facts and circumstances of this particular case, to the historical cost of the property as it appears on the books of the Company diminished by the full amount carried in or credited to the depreciation reserve. The figures therefor as of December 31, 1933 are to be found in Plaintiff's Ex. A 2, line 18, col. 3, as the aggregate book cost figure for total telephone plant (after deduction for retirements) $50,025,278.83, less depreciation reserves (line 42, col. 3) $11,483,357.56, to wit, $38,541,921.27, to which we add, for reasons hereinafter stated, the sum of $1,000,000 as a reasonable allowance for working capital, thus making the total valuation as the rate base for

further consideration and computation in this case in relation to the effect of the Commission's order, $39,541,921.27. While historical cost has been given dominant weight in the valuation in this particular case, it is to be observed that no specific additional allowance has been made for the element of intangible value, called going value, and the full depreciation reserve (now about $1,500,000 more than normal) has been deducted from the cost of the physical property. We will mention some of the special considerations which have led us to give dominant weight to historical cost.

The history of this particular Company covers a period of 50 years. It began in 1884 with a telephone plant local to Baltimore City, and has gradually in subsequent years absorbed practically all other telephone companies both in Baltimore City and in the State of Maryland. The accuracy, fairness and completeness of the cost data as recorded in the books of the Company have not been challenged. Since 1910 it has been subject to Commission regulation in Maryland with requirements for full periodical reports, and since 1913 it has been obliged to comply with the requirements of the Interstate Commerce Commission in keeping its accounts. It has been not only under the constant current annual supervision of the Maryland Commission but it has frequently had rate hearings including several valuation proceedings before the Commission and one in 1925 before a three-judge court in this district. (See *C. & P. Tel. Co. v. Whitman*, 3 Fed. (2d) 938). It appears from an examination of the opinions of the Commission in these cases that at all times up to the present the Commission has found approximately that the fair value of the Company's tangible property for rate making purposes has been the same as the book costs and since 1916 there has always been allowed in addition for rate purposes an

amount for intangible values of over $700,000. Although the Commission has at times somewhat increased the value of the property of the Company over book costs the latter have never been written up on the books, not even after a substantial increase made in 1925 as the result of the court valuation at that time. On December 30, 1911, the Maryland Commission filed an extended opinion with regard to the value of the property of the Company and its rate schedules, after hearing and consideration. (Note 1). As of September 30, 1910, it found that the fair value of the telephone property less depreciation, $5,665,729.74, was almost identically the same amount recorded on the books of the Company at cost. On this value the Commission allowed an 8% return and a depreciation allowance of about 6% on an average, and the rates were fixed accordingly.

In 1914 in consequence of a petition by organized telephone subscribers (the Telephone Protective Association

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Note 1: In that opinion (Md. P. S. C. R. Vol. II 375) the Commission said:

"As the first step in the investigation, the Telephone Company was required to furnish a detailed list of all its property, with an itemized statement of the values, and to insure that this should be full and complete, our Chief Engineer prepared a set of interrogatories to elicit the desired information. The answers to these interrogatories were referred to our Chief Auditor for verification by comparison with the Company's books and accounts. After a close and careful investigation the Chief Auditor reported the accounts thoroughly systemitized and accurate, and that while there had probably been some over-valuation of the properties existing at the time of consolidation in 1883, this had been to a large extent corrected by the liberal deductions since made for depreciation, and that he found nowhere any suggestion of value claimed for intangible property. Our Chief Engineer's investigation extended over a period of about five months, during which time his work with his entire staff was unremitting. On March 17, 1911, with other conclusions, he reported that after going over all the inventories and checking every item, he found the 'book' values stated by the Company so reasonable and moderate that, in his judgment, nothing could be gained by a 'physical valuation'."

It was then noted that the Chief Engineer's opinion had been confirmed in substance by a telephone company engineer of international reputation independently engaged by the Commission.

of Baltimore City), the Commission again held an elaborate rate hearing and on March 18, 1916, it filed an extended opinion of more than 100 printed pages reviewing the valuation and rates of the Company. In this case a physical valuation was made by engineers for the Commission as well as computation of cost of reproduction by engineers for the Company. The value then found for the physical property was substantially the same as the estimated original cost and only slightly less than the book value. After deducting existing depreciation found to be 20%, and then adding $705,000 for intangible values and an allowance of $500,000 for working capital, the final rate base was fixed at $11,554,758. (Note 2).

During the World War the telephone property was taken over by the Government for operation and the rates were raised. When the property was restored to private ownership the Commission, on the petition of the

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Note 2: In that case (Md. P. S. C. R. Vol. VII, 143, near the end of the opinion—also defendant's Ex. 15, p. 96) it was said:

"It will thus be seen that while our final figure of $11,554,758 was ostensibly the outcome of an effort to value the property upon the basis of reproduction cost, it in reality becomes in the end fairly representative of its estimated original cost as well.

"We have seen that if the earnings for the year ending June 30, 1914, were capitalized at 6 per cent, they would indicate an earning capacity of $11,220,664.

"Tabulated, these figures stand as follows:

Original Cost	$11,554,758
Reproduction Cost	11,554,758
Book Value	12,972,036
Earning Capacity	11,220,664
Capitalization	9,760,000

"In view of the approximate unanimity of results reached by each of these five methods of ascertaining value, it would seem clear that the fair value of the respondent company's property in this State is in or about $11,500,000, and inasmuch as this figure so closely approximates the depreciated original and reproduction cost values of the company's property as of June 30, 1914, we have accepted such value of $11,554,758 as the fair value of the property on that date for rate-making purposes."

Protective Telephone Association of Baltimore City, held another rate hearing and thereafter filed another extended opinion under date of August 18, 1920. (Note 3). From the Commission's opinion, (Defendant's Ex. D 16, page 9) it appears that the book value of the telephone property as of December 31, 1919, was $18,523,885. In determining the fair value as of that date the Commission adopted as total cost new a slightly larger figure, $19,272,057, the difference between the net increase in book value and in reproduction cost new increase being due to the fact that since 1914 plant retirements had been credited to book values at the average book cost but were valued for the purpose of bringing up to date previous reproduction figures at the average price used by the Commission in the previous case. The Commission again deducted depreciation at the rate of 20% and again added $705,000 for intangible values and allowed $750,000 for working capital, thus making the fair value, as of December 31, 1919, depreciated $16,725,532. Rates were fixed which were calculated to allow the Company a return of 5.30% on an estimated average fair value in 1920 of $17,250,000.

In 1924 the Company asked for an increase in rates which, after a contested hearing, was refused by the Com-

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Note 3: See Md. P. S. C. R. Vol. XI, 197. The preceding case in 1916 was referred to in the following way, the personnel of the Commission having in the meantime changed:

"Osborne I. Yellott, Esq., had, in the meantime, been appointed Assistant General Counsel, and the inquiry was planned and executed under the guidance of this most competent, industrious and efficient expert in the domain of public utility regulation. The investigation of the Company's property, business, books and affairs was systematic, thorough and exhaustive. Mr. Yellott had the assistance of Messrs. Marbury and French, who made a deep study of the problems presented, and of the Commission's engineers and auditors, and also of the services of the best telephone engineering and accountancy experts that could be procured. The work in this case is epochal in the development of utility regulation by State Commissions and is universally conceded to be a monumental undertaking, masterfully executed according to the most modern and approved methods of engineering and accounting rules for the determination of rate-making values."

mission in an extended opinion filed December 29, 1924. (Note 4). The Company contended in justification for its requested increase in rates, that the value of its property had greatly increased over the amounts previously allowed as fair value by the Commission and claimed on the basis of an appraisal made by its experts, that the depreciated value of its property by one appraisal was $41,541,110 and by another $37,115,153, as of December 31, 1923. The Company's book cost of that date after deducting depreciation reserve was $21,563,683. The Commission rejected the Company's appraisals and adhered to the valuations on the principles laid down in the former cases which was slightly more than book cost, increased by an allowance for working capital and intangible values, less depreciation reserve, thus arriving at a fair value of $24,350,944. Working capital was increased from $750,000 to $975,000. In the opinion it was said:

> "The Commission is convinced that the rate base established in case No. 690 (in 1914) was generous to the Company and was to be regarded as final, and that changes in it were to be made on the basis of net additions. The Commission therefore feels in duty bound to adhere to it."

It found that the return to the Company at the then prevailing rates would be 5.96%. The Commission was apparently greatly impressed with the consideration that the local telephone company was in practical effect a branch or department only of the national American Telephone and Telegraph Company and that the contract between the two companies whereby the local company paid the A. T. & T. Co. 4½% of revenues was too favorable to the parent company and that in fairness to the Maryland telephone subscribers the revenues of both companies from their operations in the State, should be

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Note 4: Md. P. S. C. R. Vol. XV, 241, 273.

blended and pooled in the determination of what was a fair return. (This payment has now been reduced to 1½ and is not in issue.)

The Company appealed to this court for injunctive relief which, after hearing by a three-judge court, resulted in the issuance of an injunction with opinion holding in substance that the fair rate base for December 31, 1923, was $29,507,949, (after deducting depreciation but including working capital and going value) and that the Company was entitled to a return of not less than 6% thereon. The effect was to increase the Commission's valuation by over $5,000,000 and to increase valuation over book cost almost $5,750,000. Neither party appealed from the decision and on remand of the case to the Commission, the latter redetermined the value as of December 31, 1924, at $33,399,530 by adding to the value as determined by the court subsequent additions with adjustment for decrease in depreciation reserve, on which new rates were based to yield 6% return. The rates so fixed remained unchanged by the Commission until the latter instituted the present rate case of its own motion on January 19, 1933, which resulted in the order for a reduction of rates, the validity of which is involved in this proceeding.

From this review of the history of the relations of the Company and the Commission, it appears that the book cost of the property with relatively small additions for intangible values and working capital, has been substantially the constant basis of valuation for rate making since 1912 with the exception of the period beginning in 1925 when the valuation was raised as a result of the court proceedings. This increase in valuation as appears from the opinion in the case (3 Fed. (2d) 938) resulted from the conviction that materially higher price levels

over those prevailing at the time of the original physical valuation of the Company's property in 1914 had been reached and seemed to be permanent, and the decision was evidently made in deference to the effect of binding decisions that valuation of the Company's property was required to be on the basis of present values. Since then it is undoubtedly true, as has been noted in recent cases in the Supreme Court, that there has been a very general decline in values with corresponding increase of the purchasing power of the dollar, and early in 1933 when the pending rate case was begun by the Commission this change in the general level of prices seemed again comparatively permanent in its nature; so that it is not surprising to find the Commission in its opinion in this case saying (page 2):

> "The proceeding grew out of a conviction on the part of the Commission that, in view of the general decline in values of all property, the public was entitled to a reduction in the rates charged by utilities generally and that such reductions should be based on the value of utility properties at present day prices. Acting on this conviction, the Commission, when it became convinced that the lower level of prices was not merely temporary, but that, to use the words of Chief Justice Hughes of the United States Supreme Court in the opinion in the Los Angeles case, we were 'upon a changed economic level,' began discussions with utility managers throughout the State looking to a lowering of their charges."

It appears further in the opinion that voluntary reductions in rates were made by many public utilities in the State but that the Telephone Company declined to make any reduction, possibly because it had already sustained a substantial reduction in its revenues in the loss of many telephone subscribers. It was natural and reasonable for the Commission to feel that, as the Company had a sub-

stantial increase in its rates as the result of the Court's increase in the valuation of the Company's property in 1925 by reason of generally increased values, there should be a corresponding decrease of rates and if necessary a new reduced valuation of the Company's property when again there seemed to be a new and much lower economic level. The Commission, however, in its new valuation, not only eliminated the increase in value which had been made in 1925 but went very much further, and in the new valuation fixed it approximately $7,000,000 below book cost less depreciation reserve; and in doing so the Commission did not return to the principles of valuation which it had announced in successive cases prior to the court proceeding and which, as stated by it in the 1924 case, were to be regarded as final. In the present case no doubt the Commission felt that in view of the Company's repudiation of the prior basis of valuation the Commission was itself under no obligation to adhere thereto. The position is logical, but the question still remains as to whether the valuation so now fixed by the Commission is not so unreasonably low as to amount to confiscation. If the book values under all the circumstances of this case are nearly a fair measure of present value, (both physical and intangible) the valuation found by the Commission is undoubtedly confiscatory.

The valuation which we conclude to be reasonable is supported and measurably confirmed by other important evidence in the case. It is approximately the amount of actual cash investment made to produce the property. In the Company's balance sheet (Ex. A 2, lines 32, etc., col. 3) we find that the amounts invested in the capital stock and funded liabilities and surplus of the Company amount to $39,214,980. Of this amount $3,000,000 of preferred stock has been issued at par plus a premium of $15,419 and $30,000,000 of common stock has also been

apparently subscribed and paid for at par (for the most part definitely shown to have been paid in cash or by the exchange of stock for cash previously loaned) much the greater part of which has been advanced since the Company has been under Commission regulation. There is no convincing proof that any of this money has been unwisely or imprudently invested. (Note 5).

COST OF REPRODUCTION.

Another relevant fact for consideration as to value is the Company's estimated cost of reproduction new of the property less depreciation. In the very carefully considered 1916 case the Commission itself used this method of valuation and found the results substantially accorded with the book costs. In subsequent cases, up to the present, the Commission has adhered in substance to book costs as the basis for valuation. We do not consider the cost of reproduction so reliable for valuation of a public utility as book costs (when the latter are accurate and complete and have been built up under conditions not greatly dissimilar to those prevailing at the time of the rate case, and likely to prevail in the near future) because it necessarily proceeds upon hypothesis as contrasted with actualities, and is so greatly dependent upon estimates only, supported largely by merely expert opinion, and involves many highly speculative features. Nevertheless, as indicated in many authoritative judicial decisions, it is a relevant fact and entitled to fair consideration. We have so considered it here. While we cannot accept its final figures for the ultimate valuation, yet on analysis we do find, in certain of its important ele-

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Note 5: It does appear from the Commission's opinion in the 1924 case (page 21) that the competing Maryland Telephone Company in Baltimore City acquired in 1906 entailed a loss of approximately $3,450,000, all of which, however, was absorbed by the American Telephone and Telegraph Company and the New York Telephone Company and not charged to the C. & P. Telephone Company.

ments, substantial confirmation of the valuation that we have concluded is fair and just both to the Company and the public.

The estimate of cost of reproduction as submitted by the Company is summarized in Plaintiff's Ex. A 32 where the depreciated value as of December 31, 1933, is estimated to be $48,422,816. And the component figures are supported by numerous exhibits and the oral testimony of witnesses in great detail. The plan of this method of valuation is to value directly the principal elements of the Company's property by estimating first the "directly distributed costs" thereof at present prices for labor and material and to add thereto, for necessary incidental further costs of construction, percentages sometimes called "over-heads" but here called "undistributed construction costs." To the aggregate so produced there is further added the costs of certain land not previously included, and all rights of way and other generally necessary equipment and also substantial allowances for working capital and intangible values called "going value"; to none of which are the so-called over-heads applied. The elements of property contained in the appraisal under the heading of "directly distributed costs" include the important items of land and buildings. In this case the value of the land is covered by stipulation of counsel and is therefore not in dispute; and the depreciated value of the buildings is given in the uncontradicted testimony of two very competent local builders. The remainder of this class of property consists of what is peculiarly telephone apparatus and equipment, such as central office and private branch exchange and other station equipment, pole lines and wires and aerial and underground and submarine cables. The whole of this peculiar telephone property was not directly appraised but representative portions or samples thereof were directly inventoried and

valued at prices currently paid for labor and materials. Some of it was valued by translating original cost into 1933 values, by an index translator of actual telephone property costs for materials and estimated wages.

If we omit for the moment the allowance made for working capital and going value, and the particular amount deducted for depreciation, we find no substantial objection to the general plan of valuation adopted for the other items in the appraisal, although in so doing we are not to be understood as adopting for valuation the particular figures in the appraisal. The general plan that has been followed is, we understand, consistent with the theory of this method of valuation. Counsel for the Commission emphasizes specifically two objections to the appraisal other than for the items of working capital and going value. These objections are (1) that the prices used for the present cost of labor and materials are too high, the latter being based on the prices currently charged by the Western Electric Company, a subsidiary of the American Telephone and Telegraph Company, the owner of all common stock of the local Telephone Company, and (2) that the percentages allowed for "undistributed construction costs" are excessive. As to Western Electric prices (of which more will be said hereafter) it is sufficient here to say that if the criticism is accepted as valid the result, under the uncontradicted testimony, would be to reduce the aggregate of the appraisal by only $1,500,000. As to the labor cost, we do not find the criticism valid. Although the price level of wages generally has declined in recent years, this is not equally true with regard to public service wage rates in Baltimore City. The uncontradicted evidence is that the Telephone Company's wage rate has been rising rather than falling. This is explained on the ground that in some respects the Company's wage rate had been unduly low in past years

and certain adjustments in recent years have been made with the effect of a general increase in the average rate paid. (Note 5a). The evidence is not susceptible of a definite determination in dollars as to the relative influence of the wage rate and trend of prices for telephone apparatus as affecting ultimate cost in recent years. (Note 5b). With regard to the percentages allowed for

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Note 5a: There would seem to be no just criticism from the standpoint of public policy in maintaining the wage rate of public utilities even at a time of generally declining prices, where it is reasonably possible to maintain them. Certainly it has been the announced policy of the general government that wages should be maintained so far as possible despite the depression.

It is common knowledge in Baltimore, and especially within the knowledge of one of the Judges of this Court (where the United Railways Company of Baltimore is in receivership) that there has been no reduction in recent years in the wage rate of the employes of the United Railways although there have been other economies in operation and probably a substantial reduction in the number of employes owing to these economies and lessened traffic.

It should also be noted that the wage rate paid by the Telephone Company in the last ten years has been generally lower than the average Baltimore wage rate as determined by the Commission. On the basis of valuation by book or historical cost the public has obtained the advantage of this in the construction costs charged to capital on the books of the Company. (See Plaintiff's Ex. A 46).

Note 5b: Defendant's Ex: D. 5, page 51, indicates that the weighted average of the value of labor and materials in fixed capital deductions to the telephone property from 1924 to 1932, inclusive, was 64.99% for material and 35.01% for labor. But how far in dollars the rise in the Telephone Company's wage scale is off-set or over-balanced by decreased prices for material is not readily determinable from the evidence. In the valuation based on book costs, the public has gotten the benefit of the actual current wage rate in the past paid by the Company to the extent that it has been lower than the general labor wage rate paid in Baltimore. In the cost of reproduction the assumed wage rate is the Company's present current wage rate (now somewhat higher than in the past) but adjusted downward for wholesale or large construction work, according to the testimony of the Company's chief engineer, Speer. The rate so assumed is of course the personal estimate of the witness and it is criticized as too high by the Commission's witness, Smith. Neither the estimate nor the criticism thereof is supported by sufficiently detailed data to enable the court to determine with certainty which is correct. The witness, Speer, seemed to be a very competent engineer and credible witness but his assumption of a particular wage rate was necessarily an estimate only, for a hypothetical case. This illustrates the view that the cost of reproduction is inherently a method of valuation less satisfactory than historical cost in this case.

"'undistributed construction costs'' it will be observed from the Exhibit referred to that the total allowance amounts to $7,494,998 on a basis of $39,536,404, not quite 19%. Without specifically approving these particular percentages, or the several items thereof, we observe that as a whole they are not excessive when compared with allowances of the same nature which have been made in other cases where reliance has been placed upon this method of valuation. (Note 6).

We have made the following comparison between valuations by book cost and by estimate of cost of reproduction in this case. The figure for book costs new is $50,025,278, which, of course, does not include any specific sum for going value. The comparable figure in the estimate of cost of reproduction, deducting the $4,500,000 allowed for going value and $1,615,000 for working capital, is $49,031,267. Both of these figures are undepreciated. To compare fair value as we have determined it with cost of reproduction necessitates some adjustments in the latter. Our valuation proceeds on the basis of taking the total book cost of the property new and deducting the full depreciation reserve and adding thereto $1,000,000 for working capital ($615,000 less than allowed in cost of reproduction new), and without specific additional allowance for going value. To adjust the estimate of cost of reproduction to a comparable basis we must make certain deductions therefrom; (1) the reproduction appraisal deducts for depreciation only $6,723,451. The comparable item deducted by us is

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Note 6: In the Commission case in 1916 the subject was very fully considered and it was determined that percentage allowances of this character were real and not imaginary elements of cost and the amounts allowed in that case both in the aggregate and in detail for comparable items were as nearly as large (17.67) as here. In Los Angeles Gas Co. v. R. R. Comm., 289 U. S. 287, 310, it is noted that the estimate of reproduction submitted by the Commission's Engineer included "overheads" figured at 22.32%. See also Ohio Utilities Co. v. Comm., 267 U. S. 359, 360; New York Tel. v. Prendergast, 36 F. (2d) 54, 64.

$11,483,357—a difference of $4,759,906; (2) the appraisal allows $1,615,000 for working capital; our allowance is $1,000,000—a difference of $615,000; (3) for the comparison only there may also be deducted from the reproduction appraisal the amount of $1,500,000 which counsel for the Commission contends is an excessive amount allowed for cost of material. The sum of these three deductions is $6,874,906, which must be subtracted from the estimated cost of reproduction new, less depreciation, $48,422,816, thus reaching $41,547,910 as the figure given by the estimated reproduction cost (including going value, at $4,500,000) as comparable with our valuation of $39,541,921 (which includes going value although not specifically appraised therein). The difference between these two figures, to wit, $2,005,989, represents what we consider at least an excessive allowance for going value in the cost of reproduction.

Therefore, comparing the two methods of valuation, book cost and cost of reproduction new, as they appear in the evidence in this case (with the adjustments that we have indicated with regard to the latter, which make it fairly comparable to the former), the fair inference is that each tends to confirm the other and to indicate that the present value of the property, whether considered from the standpoint of actual historical cost or based on cost of reproduction new at present prices, and giving adequate consideration to intangible values, is approximately the same, and is between $39,000,000 and $40,000,000. But even if it could fairly be said that the adjustments we have made in the Company's estimate of cost of reproduction new are too drastic, we nevertheless adhere to our view above expressed that dominant weight should be given in this case to actual historical cost in preference to other methods of valuation. As was said in the *Los Angeles Gas Company* case, (page 308):

"The weight to be given to actual cost, to historical cost, and to cost of reproduction new, is to be determined in the light of the facts of the particular case. McCardle v. Indianapolis Water Co., supra."

Nor do we think the valuation so arrived at can be justly regarded as unfairly high to the public. As we have pointed out it is almost exactly equivalent to the actual dollars invested in the property. It eliminates the additional value of $5,750,000 allowed by the court in 1925 over and above book costs.

GOING VALUE.

It also eliminates any specific allowance for going value which was fixed by the Commission in the 1916 case at $705,000 after full consideration. The theory of an allowance for going value is that the property as a going concern with attached business of many thousands of telephone subscribers and with a large and substantial income therefrom is obviously of substantially greater value than that inhering in the mere physical structures constituting the telephone plant. It is difficult to prescribe a formula for the admeasurement of this intangible element of value. But that it is intrinsically an item for important consideration in rate making is generally recognized in all rate cases. In not making a specific allowance for going value in this case we wish to make it plain that we have not failed to consider it as an important element in the valuation. But as admitted by counsel for the Company a specific additional allowance for going value has much less support in reasoning and authority when the valuation is based on historical cost than when based on cost of reproduction new. And intrinsically considered on the merits it must be realized whatever intangible element of value inheres in the property and business by virtue of its efficient management and integration as a going concern, accumulates not as a separate

and independent element of value but gradually from time to time coincident with the growth and management of the business and is in substance an incident to the development of the business contemporaneously paid for in the expense of operation and maintenance taken out of the rates paid by the public.

All relevant facts considered, we are of the opinion that a fair allowance for going value is made when we value the telephone property as a whole and as a going concern at its actual book costs less full depreciation. *Dayton Power & Light Co. v. Public Utilities Comm. of Ohio*, (U. S. Sup. Ct., April 30, 1934). (Note 7).

It is also relevant to the case to point out that, as fair valuation in this case is the same as book cost less depreciation reserve, further rate litigation, so expensive primarily to the Company and ultimately to the public may, it is hoped, be avoided and subsequent changes in the rates when necessary in fairness either to the Com-

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Note 7: In this case, the last expression of the Supreme Court upon the subject, in a case where the Ohio Commission had not made any specific additional allowance for going value, the court said:

"The decisions of this court show what going value means (Los Angeles Gas and Electric Corporation v. Railroad Commission of California, supra, p. 313), distinguish it from good will, and hold that upon proof of its existence it may have a place in the base upon which rates are to be computed. The Commission was of the opinion that there was here no constituent of property that called for separate appraisal apart from the recognition that had been given it as a contributory factor in other elements of value.

"The appellant is a new company, engaged in business for a few years. The value of its physical assets is less than a million dollars. In the brief term of its existence it professes to have added to that value from $125,000 to $140,000 by combining the parts into an organism and causing them to work together. The Commission took the view that whatever increment of value had emerged from these sources was sufficiently reflected in the allowance of the cost of developing 'new business' and in the appraisal of the physical assets as parts of an assembled whole. A like conclusion has been reached by this court in very similar conditions. Los Angeles Gas and Electric Corporation v. Railroad Commission of California, supra, p. 314. Going value is not something to be read into every balance sheet as a perfunctory addition."

pany or to the public can, it is hoped, be met by action of the Commission in reducing or increasing the rate of return. The re-establishment of book value less depreciation as the rate base will also enable the Commission to return to the principle of valuation which obtained prior to 1925 and was then regarded by the Commission as fixed and final. And it has the added advantage of enabling the accounting for depreciation annuities or annual expense to be hereafter as well as heretofore on the base of cost as required by the uniform system of accounting of the Interstate Commerce Commission for telephone companies. (Note 10).

DEDUCTION OF DEPRECIATION.

As already indicated, we have reached our conclusion as to valuation by deducting from historical book cost new the whole amount carried as depreciation reserve which, as of December 31, 1933, amounts to $11,483,357.56 and represents approximately 23% of the cost new of total fixed capital (Plaintiff's Ex. A 2). In so doing we have not overlooked the Company's contention that only existing and accrued depreciation may properly be deducted from value new. (See *McCardle v. Indianapolis Water Co.*, 272 U. S. 400, 416).

And it is further contended by the Company that the amount of the depreciation reserve does not necessarily, and under proper straight line depreciation accounting will not, accurately measure existing accrued depreciation, but should always exceed it. It has been held that

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Note 10: And thus avoid the conflict in accounting practice for interstate and intra-state business respectively. See Commission's opinion, page 52, where the Commission after pointing out that it would require the annual depreciation expense to be calculated on value (lower than cost) said: "And if as a result of this the Company finds itself in trouble with the Interstate Commerce Commission, it will have to adjust such trouble as best it may." See Commission's opinion, pp. 50, 52; and Plaintiff's Exs. A 7, p. 67, and A 8, p. 20. See also United Railways v. West, 280 U. S. 234.

a surplus accumulation in the depreciation reserve over and above that reasonably necessary may not constitutionally be applied by Commission order to supplement a deficiency in future net earnings under prescribed rates (*Board v. N. Y. Tel. Co.*, 271 U. S. 23); and it has also been recently judicially "recognized that accrued depreciation as it may be observed and estimated at a given time and an appropriate allowance of depreciation according to good accounting practice, need not be the same" (*Clarks Ferry Bridge Co. v. Public Service Comm. of Penna.*, 291 U. S. 227). There is, however, force in the contention that in the case of an old company, as here, where, over a long period of years in the past, the ratio of the depreciation reserve to the cost new of the whole plant has remained relatively stable, after deductions for retirements of plant (as is true for ten years or more in the case of this Company), it is fair to infer that the amount of the depreciation reserve does approximately measure the existing accrued depreciation. This view has been approved by the Interstate Commerce Commission in telephone property accounting and has been in substance judicially applied, 177 I. C. C. 397. (*Depreciation Charges of Telephone Companies*); *N. Y. Tel. Co. v. Prendergast*, 36 Fed. (2d) 54, 65. See also *Railroad Comm. v. Cumberland T. & T. Co.*, 212 U. S. 414, 424; *C. & P. Tel. Co. v. Whitman*, 3 Fed. (2d) 938; *Idaho Power Co. v. Thompson*, 19 Fed. (2d) 547, 566. Viewing the matter simply as a question of fact, to be determined from the evidence, it is clear that the burden of proof is on the plaintiff to establish to our satisfaction that the amount of the existing depreciation is actually less than the reserve therefor. (*N. Y. Tel. Co. v. Prendergast*, supra). The only testimony so offered by the Company is that of the witness, Sloan, and we are not satisfied that his estimate of accrued depreciation makes sufficient allowance for all the elements constituting real existing depreciation

tion. On the contrary the history of the depreciation reserve of this Company furnishes much affirmative proof that the book reserve measures approximately the existing depreciation in the plant. The subject was elaborately considered by the Commission in the 1916 case, which then found the value new to be $13,062,197, and the existing depreciation amounted to $2,612,439, just 20%. At that time the depreciation reserve was only $1,367,700, about 10%. But the Commission, pursuant to what it deemed good policy, continued the Company's rates which were estimated to yield not more than an 8% return and sufficient to build up the reserve to 20%, and thereafter to keep it uniform at that amount. (Note 11). Again in 1920 the Commission considered evidence that the structural value of the property was approximately 70% of its cost new, but that the depreciation reserve was only 16.88%. Nevertheless it adhered to its policy of deducting for depreciation only 20% and allowed the Company to continue to build up the reserve to 20%. In subsequent years the

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Note 11: In that case the Commission said (See Defendant's Ex. D 15, page 44):

> "Our conclusion is that the public should be required to create depreciation reserves not normally exceeding 20% of the plant investment as the same appears from time to time. After this reserve has been created and the property in its entirety comes to be valued it will be found that four-fifths of the same belongs to the stockholders and that one-fifth has been contributed by the public. This advance will have been made by the public as its guarantee that so far as it is concerned the Company will at all times be in a position to make replacements of its property when and as they are required for efficient service. And the reserve of 20% being created and invested in additions to the plant, the Company would be entitled to earn upon 80% of the total investment."

And on page 54 the Commission further said:

> "We hold that the present depreciated value of the Company's property upon the basis of reproduction cost new is 80% of this amount, $10,449,758. The Company will be held entitled to earn upon this amount, plus such additions as we may make thereto for non-physical values and working capital. * * * Meanwhile the Company will further be held entitled to set aside out of earnings from year to year a sum to be added to its present depreciation reserve until such time as such reserves amount normally to a maximum average of 20% of the plant investment."

Company has added to the depreciation reserves out of gross revenues until for the past ten years or more the reserves have averaged or approximated 20% of the fixed plant. For 1933 the percentage was about 23%.

Again in 1924, the Commission in determining the valuation adhered to its uniform principle of deducting 20% of cost new for depreciation. In the ensuing court case (3 Fed. (2d) 938, 951) the valuation adopted was diminished by the full depreciation reserve adjusted consistently with the cost new to the then price level as determined by the Court. The Commission has similarly treated this item in this case with adjustment of price level as determined by it.

In view of this history we think it only fair to the public and not unfair to the Company to take the whole depreciation reserve from the book cost new. We do not mean to imply that the public owns any part of the reserve (which has been invested in the plant and not kept intact in a separate fund) or that the Company is not entitled to earn on the whole fair value of its property, but viewing the whole evidence, the fair value of the plant is the book value less the reserve. We are not unmindful that at the present time the depreciation reserve is slightly higher than normal and to the extent that it is, it is unfavorable to the Company in the final result as compared with the practice in the earlier Commission cases of deducting a flat 20% irrespective of the actual reserve which was expected, however, on the average to be just 20%. But this disadvantage to the Company is, we think, off-set by allowing it the full of its actual costs despite the generally lower trend of prices.

THE COMMISSION'S METHOD OF VALUATION.

We come now to a more detailed consideration of the method of valuation adopted by the Commission. As al-

ready indicated we have approached the problem in the light of the presumptive correctness of the Commission's valuation which we would not be warranted in disturbing unless clearly erroneous. Perhaps it would have been more logical to have directed our consideration in this opinion first to the valuation made by the Commission. But we have postponed the discussion until now in order that it could be better understood in the light of the historical matter above presented.

What the Commission did was this. It approached the rate hearing under the conviction that the Telephone Company's rates must be reduced in view of the general changed economic level of prices. In its investigation it made no new physical inventory or appraisal of the Company's property and produced no testimony either in the hearing before the Commission or here as to valuation except to depreciate book costs (as enhanced by the court's finding of value in the 1925 case) by applying to the valuation as found by the court in 1925 and the net additions to the plant in subsequent years, a so-called "index translator" of values to reduce values as established in 1925, with subsequent annual additions, to values as of December 31, 1932, in accordance with an index of prices determined by the Commission to represent the "fair value trend." In other words, the Commission valued the Company's property on the basis of the ratio that values in 1925 and subsequent years respectively bore to values in 1932 as determined by this so-called fair value trend. This method of valuation was adopted by the Commission in order to save the time and expense that would be involved in a physical appraisal. Nevertheless the Company did submit in the hearing before the Commission full data in support of its valuation based on reproduction cost new less depreciation. The Commission, however, disregarded this in its conclusion. The Commission's method in obtaining the so-called index

translator to establish the relationship between values in 1925 and succeeding years with those of 1932 is fully explained in its opinion and is graphically illustrated by a chart appearing opposite printed page 29. The Commission developed an index for values which it called a "fair value" trend. This it evolved as a composite of several separate price trend curves which are referred to in the opinion and included in tables appearing at pages 24 to 28 inclusive. The Commission described its method in a note on page 26 as follows:

> "These 'Fair Value' Translators are based upon December 31, 1932, as 100, and are intended to be, respectively, the percentages which, when applied to the value of the dollar at December 31, 1923, and to the average value for each of the years 1924 to 1931, inclusive, will produce value as of December 31, 1932."

The Commission developed its own curve or trend by taking a "weighted average" of 16 separate indices for prices of certain commodities and construction costs. Taking the whole value of all the price trends considered as indicated by the number 31, it assigned (on what exact basis does not clearly appear) a value to each of the several price trends. Thus to the United States Department of Labor "all commodities" trend it assigned a value of 4; to the National Association of Purchasing Agents (commodity) trend, a value of 2, etc. As a result it deduced a price curve or ratio of price which was not greatly different from the so-called "all commodities" average put out by the United States Department of Labor. The latter is understood to represent the average price trend from 1923 to 1932 inclusive, of 784 commodities as raw materials. These 784 items are themselves sub-divided into a number of different sub-classes. The items in the sub-classes vary greatly as to their respective price trends. (Note 12). And the values which would be pro-

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Note 12: For illustration, see Plaintiff's Ex. A 37.

duced by the several price trends considered by the Commission also vary widely. By comparison we note that the value produced by the "fair value trend" of the Commission as of December 31, 1932, for the Company's property (after deducting depreciation) was $32,610,327, but as of December 31, 1933, the application of the all-commodities price trend (which for December 31, 1932, was at a lower level than the Commission's fair value trend) produced $34,332,453.56; while the price trend of the Engineering News Record (given a weighted value of 2 by the Commission) produced $41,036,789.48. (See Defendant's Ex. D 5, page 71). It is apparent that the Commission in a general way was seeking to value the telephone property on the basis of an *average* trend of cost of materials, labor and construction, but instead of taking an absolute average trend of all costs it took a so-called weighted average of only certain costs. The difference is, however, in our opinion not of fundamental importance. In either case there is the essential fallacy of *assuming* that an *average trend of all prices,* whether absolute or weighted, is a true index for the trend of construction costs of the special kind of property with which we are here dealing. Whether the valuation of telephone property is based on historical cost or reproduction new, it is, we think, obvious that the price change over a period of years can only fairly be reflected by developing a price ratio or trend for the costs entering into this particular kind of property. It is quite erroneous to assume that *changes in the price level* of *certain* commodities or the *average* of any number of commodities is similar to that of a *particular* commodity or property. This fact is amply demonstrated in the tables to be found in the Commission's opinion and in many of the exhibits filed by its counsel in this case. The fallacy of the Commission's method is also thoroughly and convincingly demonstrated in the oral testimony of the plaintiff's witnesses Barker, a valuation expert for the Vermont Commission, and a

Dr. King, an experienced economist and statistician. To some extent the Company's estimate of cost of reproduction new is based on the use of price trends but the trend or curve so developed is based definitely on telephone plant construction prices. If this valuation method is to be used at all, we think it entirely clear that the only proper use is that adopted by the Company and not that used by the Commission; provided, of course, the cost data used by the Company represented fair and reasonable prices for telephone apparatus and construction work. It is the contention of the Commission that the costs so used in its estimate of reproduction by the Company are not fair and reasonable. They were admittedly based for the purchase of materials on prices of the Western Electric Company from which the Company purchased all its telephone apparatus and equipment and on the wage scale paid locally by the Company, with some adjustment for wholesale construction work. We will consider this objection more fully hereafter.

While in the exercise of our limited constitutional function, we are not permitted to reject the Commission's valuation merely because of an erroneous method, it is our duty to look at the result obtained by the Commission and to contrast it with other standards of valuation appearing in the evidence. (Note 13). Looking at the result reached by the Commission's method we find that it contrasts very sharply with other valuations in this case. In our opinion it produces an unreasonably low valuation.

Note 13: In Los Angeles Gas Co. v. R. R. Comm., 289 U. S. 304, it was said:

> "The legislative discretion implied in the rate-making power necessarily extends to the entire legislative process, embracing the method used in reaching the legislative determination as well as that determination itself. We are not concerned with either, so long as constitutional limitations are not transgressed. When the legislative method is disclosed, it may have a definite bearing upon the validity of the result reached, but the judicial function does not go beyond the decision of the constitutional question."

Counsel for the Commission contend that the court may not disturb the Commission's valuation unless the Company has proved *beyond a reasonable doubt* "that the Commission has been wrong to such an extreme degree that in the light of all present circumstances, no reasonable body of men could have reached such a conclusion." But the law is otherwise. On the issue of confiscation the Court must exercise its own independent judgment of law and fact. *Ohio Valley v. Ben Avon*, 253 U. S. 287; *United Railways v. West*, 280 U. S. 234, 251; *State Comm. v. Wichita Gas Co.*, 290 U. S. 561, 569.

Another objection to the method used is the highly variable results by the application of the method in a period (such as the present) of changing prices. We have above noted the increase in valuation by the application of the "all commodities" index, of nearly $2,000,000 occurring in the single year of 1933. If the present general upward trend of prices continues (and there is very determined public policy to make it do so) the Company would clearly be entitled in another year or two to a new valuation of its property on this method as it is undoubtedly the law, as pointed out by counsel for the Commission, not only that rate valuation must be based largely on present price but also "it is well established that values of utility properties fluctuate and that owners must bear the decline and are entitled to the increase." *McCardle v. Indianapolis Water Co.*, 272 U. S. 400.

The Commission's method of valuation is also erroneous in its assumption that telephone company property fluctuates approximately in accordance with general conditions. There is much evidence in the case to the contrary, and this is to be expected in the case of a utility subject to Commission regulation. The maximum earnings of utility companies by law never attain the peaks

realized in general trade and business. Nor in time of depression do their earnings fall in proportion to that of general business. The service afforded by a well-managed utility is a common necessity for which there is a comparatively constant demand. Thus we find that despite the onset of economic depression in 1929 the volume of the Telephone Company's business constantly increased through 1930 and 1931, reaching its peak in the latter year; and it was not until 1932 that the earnings began to decline. And since January 1st last, the growth has again begun and is so marked that counsel for the Commission in argument notes an increase in net operating income of more than $300,000 is indicated for the current year. (Note 14).

Note 14: The net earnings of the plaintiff company have been relatively stable even during the depression. See Plaintiff's Ex. A. 5. It appears therefrom that the percentage of net telephone revenues to average plant in service undepreciated for the years 1924 to 1932, inclusive, were as follows: 1924—4.71%; 1925—6.36%; 1926—6.98%; 1927—6.08%; 1928—6.62%; 1929—6.71%; 1930—6.54%; 1931—6.85%; 1932—5.78%; and, as appears from the testimony of Mr. Gretz on cross-examination in relation to this exhibit, if the percentages were calculated on cost less depreciation reserve, they would have been respectively as follows: 5.93%; 7.81%; 8.43%; 7.40%; 8.09%; 8.29%; 8.10%; 8.41% and 7.10%.

The relative stability of telephone business generally also appears from Defendant's Ex. D 12, pages 18 and 19, where, in a comparison of the trend of corporate earnings of various industries, it appears that for 15 telephone and telegraph companies the ratio of decline in earnings from the peak of 1929 to the end of 1932, was from 100 to only 73, with a similar decline of 45 electric light and power utilites from 100 to 76; which contrasts with much greater declines in other industries, for instance, automobiles and trucks declined from 100 to minus 11; and electric equipment generally declined from 100 to 7; and railroad equipment generally declined from 100 to minus 19; and even cigarettes and tobacco from 100 to 56. And on the following page 19, the statistics for net earnings of various industrial groups show 25 telephone companies in the Bell System had net earnings in 1929 of $217,105,000 which fell to only $139,336,000, in 1932; while very many industries showed absolute loss in large amounts for 1931 and 1932, and the decline for the industries generally was very much sharper than in the case of telephone companies. See also the same Exhibit, page 20, showing that companies engaged in "communications" had, as percentages of income in 1932, 73.2% of 1929, and electric light and power companies had a similar percentage of 74.3%, both of which were higher than any other industries listed with the exception of "government" which would seem to be non-comparable. The data on this tabulation is said to have been compiled by the U. S. Department of Commerce with the co-operation of the National Bureau of Economic Research.

Despite the relative stability of earnings of publicly regulated utilities and particularly well-managed telephone companies as shown by the evidence in the case, it seems to be the theory of the Commission that there is something surprising and artificial in the trend of costs for telephone equipment and construction. Thus emphasis is laid on the comparison of the trend of telephone costs with that of other price trends. This is graphically shown in the Commission's chart opposite page 29 of its opinion where it appears that from 1923 to 1932 the trend of telephone costs is much flatter than that of all-commodities and other price curves. This Telephone Company composite trend is shown by the evidence to have been based on the local wage rate paid by the Telephone Company and current prices of the Western Electric Company for telephone apparatus and equipment. The price trend of the Company's wage rate in comparison with the price trend of Baltimore wage rates used by the Commission appears from Plaintiff's Ex. A 46. For reasons already indicated we see no reasonable objection to the use by the Company of its average actual wage rates in estimating cost of reproduction adjusted as mentioned above.

WESTERN ELECTRIC PRICES.

There is much testimony in the record as to the relationship between the local Telephone Company and the American Telephone and Telegraph Co., and the Western Electric Company. All the common stock of the local Telephone Company is owned by the A. T. & T. Co., which also owns or controls 21 local telephone companies throughout the United States, constituting 75% of all the telephone business in the country. The A. T. & T. Co. also owns practically all the stock of the Western Elec-

tric Company which in turn manufactures and sells telephone apparatus and equipment to the 21 associated companies known as the Bell System; and this constitutes the very much greater portion of the entire business of the Western Electric Company. It is obvious that the A. T. & T. Co. has effectual control over the whole business and the Western Electric Company is in substance its manufacturing department for the supplying of telephone apparatus and equipment to the Bell Companies, including the local company. For many years past practically all the supplies of the local company have been purchased from the Western Electric Company and the Company's estimated cost of reproduction is based on the *present prices* of the Western Electric Co. As the latter is not directly subject to Commission regulation, it is apparent that the A. T. & T. Co. has the power, if it chooses to exercise it, of dictating a price schedule for the Western Electric Company which might be both arbitrary and unreasonably high if chargeable to the expenses contributed by the public through the rates. The situation is one which obviously justifies the closest scrutiny by the court to ascertain whether in fact the prices charged for telephone equipment and apparatus have been unreasonably high and therefore detrimental to the public. In this case the Telephone Company has assumed the burden of producing evidence to show that the power has not been unfairly used and that Western Electric Company prices have in fact been consistently and uniformly fair to the public. Testimony of the witnesses Crosland and Cox deals extensively with this subject, and during the course of their testimony numerous exhibits were introduced showing the contractual relations between the Western Electric Company and the several American Telephone Companies, including the local

Telephone Company. (Note 15). It appears from the uncontradicted evidence that Western Electric prices to Bell Telephone Companies in general have been lower than its prices to other customers; and also prices charged for similar telephone equipment by other companies manufacturing and selling telephone equipment (independent of the A. T. & T. Co.) which supply most of the needs of the telephone companies outside of the Bell group, have generally been materially higher than those of the Western Electric Company. It is said, however, by counsel for the Commission that the very great dominance of the Western Electric Company in the particular field of manufacture is such that the competition of the independent companies is apparent rather than real.

Note 15: See Plaintiff's Exs. A 11 to A 28, both inclusive, and A 50 to A 53; and Defendant's Ex. D 8, as explained in the oral statements of the witnesses Crosland, Cox and Smith.

Prior to a few years ago a license fee of 4½% of revenues was paid by the local company to the A. T. & T. Co. The fairness of this amount was questioned by the Maryland Commission. Several years ago the amount of the annual payment was voluntarily reduced to 1½% and the fairness of the annual payment on this basis has not been challenged by the Commission in this case.

In the 1920 case the Maryland Commission, at page 15, said:

> "The Company was required to and did file with the Commission its agreement with the Western Electric Company. The Western Electric Company is a corporation with its stock ownership lodged entirely in the American Telephone and Telegraph Co. It manufactures standard Bell telephone equipment and acts as purchasing agent for the local and other companies of the System. With the establishment of such an adjunct to the business, and the conduct of a separate but exclusively owned manufacturing purchasing agency, no fault in principle can be found. So far as the Commission has been able to find, the local company secures its apparatus at less than the prices charged companies not associated with the Bell System. The advantages of buying general supplies in large quantities for all the Bell companies are apparent." See also New York Tel. Co. v. Prendergast, 36 F. (2d) 54, 63; Illinois Bell Tel. Co. v. Gilbert, et al. (City of Chicago, Intervenor), 3 F. Supp. 595, 603; Southwestern T. & T. Co. v. City of Houston, 269 F. 878; affirmed 259 U. S. 318; State v. Southwestern Bell Tel. Co., 115 Kansas 236.

The Commission's objection in essence is that Western Electric prices are not subject to the play of open market competition; and much evidence pro and con by the respective parties has been introduced bearing on the question of whether profits of the Western Electric Company from the sale of telephone apparatus and equipment to Bell Companies have been unreasonably high or not.

But in the view we take of this case this sharp controversy has little practical importance here because we are concerned with the subject only in so far as Western Electric prices affect the valuation of the local company's property. With relation to valuation based on historical book costs, counsel for the Commission do not attack the reasonableness of prices which the Company has in the past paid for its telephone material, and no figures have been submitted in evidence as a basis for any deduction from historical book cost on this account. Nor is it contended that the net earnings of the Company should be increased on this account. And indeed the only specific complaint made by the Commission about Western Electric prices is that the Company's estimate of reproduction cost is based on the *present prices* of Western Electric which include a raise in the prices of about 10% effective November 1, 1930. But, as already noted, if the Commission's contention on this point is sustained, the effect is limited to a reduction in the amount of $1,500,000 from reproduction cost, and, for purposes of comparison with book costs, we have given effect to the contention. (Note 16).

Note 16: A graphic representation of the comparable price trends of all commodities with that of Western Electric prices is shown in Plaintiff's Exs. A 50, 51 & 52, from which it appears that in the years of 1916 to 1920, the price trend of all commodities was very greatly higher than Western Electric prices, and again was materially higher in the years 1927 to 1930, but falling materially lower in 1931 and 1932. The curve for Western Electric prices also shows a rise in 1930, and a further rise in 1934.

THE 1925 COURT CASE.

It is urged upon us that we should not disturb the Commission's valuation in this case because it resulted from substantially the same method applied by the statutory court here in 1925. (3 F. (2d) 938). And indeed something in the nature of an estoppel by judgment or verdict is sought to be maintained against the Company, although the decree of the court was in its favor on the issue presented. Neither party appealed from the decision. The contention is, however, clearly untenable. *New York Tel. Co. v. Maltbie* (Supreme Court, Feb. 19, 1934; *State Comm. v. Wichita Gas Co.*, 290 U. S. 561, 569). Doubtless the Commission felt legally justified in following what it apparently understood to be the basis of the court's decision in 1925. If is true that the court did reach its valuation by applying the all-commodities index to the book value of the property in 1914 with the annual net additions thereto. This resulted in an increase of something over $5,000,000. And it is plausibly contended by counsel for the Commission that a rule applicable in a situation of rising prices should likewise be applicable where the price trend is reversed. It is clear, however, the reasoning of the decision, apart from the actual order which enjoined the Commission in that case, is not *res adjudicata* here. And an analysis of the opinion, we think, shows that the situation then dealt with by the court was materially different from the present one. At that time it seemed apparent to all that the rise in prices during and following the World War (with a temporary recession in 1920 and 1921) had in 1925 assumed a permanent new high level and the Company was therefore justified under the controlling decisions in having a re-valuation of its property. *McCardle v. Indianapolis Water Co.*, 272 U. S. 400, 410. It submitted for the new valuation two estimates of cost of reproduction less depreciation, one more than $42,000,000 and the

other more than $38,000,000, when the book cost of $28,853,901 less depreciation reserve of $6,022,854 was only $22,831,047; and the total amount paid in and invested in plant, $21,356,366. It appears from the opinion that the court regarded the cost of reproduction as extravagantly high and was unwilling to accept what it regarded as an excessive valuation but recognized that some increase in valuation was required. It therefore turned to the only other available evidence in the case indicative of price change which appeared in the index figures of the Department of Labor, approved by Dr. Hollander, the well-known economist of the Johns Hopkins University, as being on the whole a fair measure of the value of the dollar. With respect to his testimony the court said (3 Fed. (2d) 946):

> "He accepted the index figures of the Department of Labor, used by Mr. Collins, as being on the whole a *fair measure of the value of the dollar*. He also testified that for two years those figures indicated that the value had been stable, and he gave strong reasons why, in his opinion, that stability was likely to continue for a number of years to come, although, with scientific caution, he did not commit himself to any prophecy on the subject."
>
> "As has already been said, no attempt was made to contradict this testimony or to weaken its force. It is so much in common with the conclusion of all observing men that we feel constrained to accept it, and consequently to put aside the suggestion that speedy return to anything like pre-war prices is at all probable." (Italics supplied).

It appears that the same index figures were used by, first Collins, the Commission accountant, second, Gretz, the Company's accountant, and finally by the Court, to produce three very different results. Collins' valuation was but $1,600,000 more than book cost, but Gretz calculated the value to be $38,167,548, and the court reached

a value of $36,122,912, all undepreciated. It does not appear from the opinion that the Company offered the index figures as the measure of value but rather as partial confirmation of its cost of reproduction new. In reaching its final conclusion on valuation the Court noted that both parties accepted the index figures as accurate, and was careful to say:

> "We do not wish to be understood as holding that under all, or perhaps under many, circumstances the most accurate valuation can be obtained by the use of such figures. All that we decide is that the evidence of reproduction cost demonstrates that world-wide conditions of which all men have knowledge have greatly increased the apparent value of this Company's property as measured in dollars, and that, from all that has been submitted to us, it so happens that in our best judgment the amount of that increase can be most accurately measured by the use of such figures. It follows that we find that the new or undepreciated value of the Company's property on the 31st of December, 1923, was $36,122,912."

It clearly appears that the use of index figures was not the subject of contest in 1925 that it now is in this present case; and they were used in 1925 only because the evidence afforded no other guide to valuation except the cost of reproduction which was regarded as extravagantly high. Fortunately, now, under different conditions, we are confronted with no such poverty of choice. (Note 20).

Note 20: There is apparently no other reported case in which index figures have been used in valuation of public utility property in the way they were derived and applied by the Commission in this case. Compare Wash. Heights v. N. Y. Edison Co., P. U. R. 1922 E. 218; Re The Ohio Bell Tel. Co., (1924) 2 P. U. R. (N. S.) 113; United Fuel Gas Co. v. P. S. C. W. Va., 14 Fed. (2) 289, opinion by Circuit Judge Rose. Of course the trend of prices as indicated by index numbers may be a relevant fact for consideration with all other evidence in a case, as a check on other figures, or evidence of a general economic condition or changed price level. Clark's Ferry Bridge Co. v. P. S. C. of Penna. (Supreme Court, Feb. 5, 1934), 291 U. S. 227.

Another important difference between the situation in 1925 and now is that it was then reasonably thought a new permanent price level had been reached of which the index figures might be regarded as fairly indicative. But here we are in a period of changing prices and the all-commodity index for 1932 is clearly not a just index factor for prices today when there has been already a very substantial rise as compared with 1932, and there is a determined public policy to effect a continuance of the price rise with the object of regaining the price level of 1926, with recent governmental action in reducing the gold content of the dollar to about 60% of its former value to aid in accomplishing the purpose.

But while we feel obliged to reject the Commission's valuation we wish to make it plain that we have carefully considered as relevant to the case the testimony offered on its behalf in relation to the subject. Its general effect is undoubtedly to substantiate in detail, what indeed is common knowledge, that the general price level sharply declined from 1929 to 1932. And this fact has been authoritatively judicially recognized in recent cases. *Atchison, Topeka and Santa Fe R. R. Co. v. Interstate Commerce Comm.*, 284 U. S. 48; *Central Ky. Natural Gas Co. v. R. R. Comm.*, 290 U. S. 264, 274; 78 L. E. 195; *Los Angeles Gas Co. v. R. R. Comm.*, 289 U. S. 287. As appears from an earlier portion of this opinion, we have given practical effect to this general economic condition in the valuation that we deem correct. It also has importance in determining the rate of return.

PROPERTY AT ST. PAUL AND PLEASANT STREETS.

The Commission excluded from the rate base a lot of land with building in a congested portion of the City which the Company had acquired some years ago with the intention to build thereon a branch exchange, which

has, however, not yet been done. The Commission's view was that the property was not used or useful in the public service. But the testimony shows that the outlay for the property was a reasonable exercise of business judgment and that the Company still intends to put it to the use for which it was originally purchased. Probably the business depression of the last few years has caused the delay. We think it should not be excluded from the rate base. The amount involved is not sufficient to alter the result. It cost the Company $204,000 in 1923 and is now valued by the Commission at $137,000, and by the Company at $175,000.

WORKING CAPITAL.

To the fair value of the property as we find it to be, there must be added and included in the rate base a reasonable sum for working capital. The Company claims an allowance of $1,615,072. The Commission allowed $660,863. In 1916 when the property of the Company was less than a quarter of its present size, the Commission allowed $500,000; in 1924 on a value of about $23,000,000, the Commission allowed $975,000 and after the Court's decree increased the allowance by $75,000. The reasons for the decrease made by the Commission in this case are stated in its opinion. Included in working capital is the value of materials and supplies, as claimed by the Company before the Commission, amounting to $407,452. Of this amount the Commission disallowed $158,048 on an understanding of the facts shown to have been incorrect by the testimony in this case. Restoring this item and otherwise adopting the Commission's determination brings the amount to $818,911. The Company points out that under practical working arrangements throughout the State it keeps substantial sums of money on deposit in 71 depositories as a matter of convenience in meeting local expenses and in consideration of the performance of

various clerical services in receiving payment of bills and otherwise, by these bank officials. We think a reasonable additional sum should be added to working capital on this account, and conclude that under all the circumstances the total sum of $1,000,000 for working capital will be reasonable at the present time. We have accordingly included that amount in the rate base (Note 21).

DEPRECIATION ANNUITY OR EXPENSE.

Before considering the practical effect of the Commission order for the reduction of rates, it is necessary to determine from the evidence the probable net earnings of the plaintiff for the coming year. The Commission's estimate was necessarily limited to 1932 but as the total figures for 1933 are now available and rates for the future must depend upon the earnings for 1934 and subsequent years, it is necessary at the present time to ascertain from the evidence the probable net earnings for 1934, especially as both parties now contemplate a substantial increase over 1933. The Company estimates its gross revenues for 1934 at $12,700,250, an increase of about $300,000 over 1933. It estimates current expenses at $10,131,245, thus indicating a probable net revenue of $2,569,005. The Commission's estimate of net revenue for 1934 is $2,959,093. The difference lies in two items of expense, taxes and depreciation. The tax item is estimated by the Commission to be about $60,000 more than the Company's estimate. This is doubtless due to the higher net revenue as estimated by the Commission. The bulk of the difference in the estimates is in the one item of depreciation where the Company claims an expense of $2,173,000 against an allowance by the Commission of

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Note 21: See Plaintiff's Ex. A 33, and Defendant's Ex. D 9, and Commission's Opinion pages 57 to 60. The amount allowed is fairly comparable proportionately to property and business to the allowance made in the last N. Y. Tel. rate case, 3 Fed. (2d) 54, 64; and in the Chicago case, 3 Fed. Supp. 595, 601.

$1,720,724. Alternatively the Commission allowed for depreciation expense only $1,352,284, but this computation was the result of calculating depreciation expense on the reduced valuation of $32,610,327. As we determine the rate base to be cost less depreciation reserve (without working capital, for the computation of depreciation expense) it is evident that the higher alternative figure of $1,720,724 as estimated by the Commission where depreciation is computed on undepreciated cost (as has been uniformly done in the past) must be the correct figure for the Commission's computation. (See Plaintiff's Ex. A 43, and defendant's Ex. D. 14).

The Commission's figure of $1,720,724 is reached by applying what it considers proper depreciation rates for the several property accounts of the Company. (See its opinion page 48). The average as estimated by the Commission for all depreciable property is 3.45% of the plant cost. The Company claims, however, the higher average rate of 4.38% (Plaintiff's Ex. A 4). Both are only estimates for the future based on opinion evidence of experts. Past experience is a most important guide where there has been no important change in conditions. Here, however, it is conceded by both sides that an important change has recently taken place. In past years the rate of depreciation expense has been materially affected by the factor of inadequacy of equipment caused very largely by the continual progressive growth in the size of the business; but this factor ceased to be operative with its prior force in 1932 and 1933 when the growth of the Telephone Company temporarily ceased and instead of gaining additional telephone subscribers and stations there was a decrease in the total number of stations of about 10%. The Company itself has appreciated the importance of this changed situation and has voluntarily decreased its annual charge for depreciation expense for

1933 to the extent of over $300,000, representating a decrease in the composite average depreciation rate, based on plant in service, from 5.15% to 4.38%. As the issue in the case is confiscation, the burden of proof is on the Company to convincingly demonstrate the necessity for the larger allowance from revenues for depreciation expense than that allowed by the Commission. The Company has attempted to sustain its contention by the testimony of Gompf, its engineer, and Woodford, a highly experienced depreciation engineer of the A. T. & T. Co. Their estimate of the necessary future allowances was based on a detailed study of the probable service life of the several elements of the telephone plant by Mr. Gompf, giving effect to experience of the past and the changed conditions above referred to. His testimony is illustrated by Plaintiff's Exs. A 38 and A 39. The necessary depreciation expense for the future thus estimated compares very favorably with that of other companies in the Bell System and is materially less than the average rate charged in past years. (See *Smith v. Ill. Bell Tel. Co.*, 282 U. S. 133, 158).

On the other hand the Commission has submitted in support of its estimate the testimony of Messrs. Pagon and Holland, competent general engineers, which is to the effect that, principally by reason of the changed condition referred to, a rate even lower than that adopted by the Commission would be sufficient. Their estimates are criticized by counsel for the Company chiefly on the ground that they assume the service life for many elements of the plant much greater than can be justified by any past experience, and give no effect in the present to inadequacy that may reasonably be expected in the future.

If the estimate for the future is to be based alone on the past experience of this Company, it cannot reason-

ably be found that the Company's estimate for the future is excessive. We have seen that prior in 1924 an annual depreciation rate of 6% was allowed by the Commission and continuously thereafter to the present time a rate has been permitted in excess of 5%, and with this rate in effect from 1924 to 1932, inclusive, the depreciation reserve in proportion to plant in service has remained fairly level at approximately 20%, which is the ratio determined to be proper by the Commission in several rate cases affecting the Company prior to and including the year 1924. Therefore, it cannot be said that prior to 1933 the depreciation reserve unduly increased under the rates then prevailing. (See Plaintiff's Ex. A 4).

But, as already noted, a material change in conditions occurred in 1932 and 1933. On December 31, 1931, the Company had in service 221,309 stations but the number declined to 208,159 on December 31, 1932, and to 199,127 on December 31, 1933, a loss in stations of about 10%. Concurrently there resulted an important change in the relation of the depreciation reserve to the amount of plant in service. Thus the aggregate reserve increased from $10,229,980 in 1932 to $11,483,358 in 1933, a net increase of $1,253,378 in the accumulated depreciation reserve, thus increasing the latter in percentage of plant in service from 20.48% in 1932, to 22.97% in 1933. And at the same time it is to be noted that the progressive increase in the book cost of "total fixed capital and progress" which had increased from $28,003,479 as of December 31, 1923, to $49,991,946, as of December 31, 1932, was practically stopped, the figure as of December 31, 1933, being $50,025,278, a net increase of only $33,332. It thus appears that the Company took out of its revenues and charged to depreciation expense at least $1,250,000 in 1933 more than was necessary to preserve the level balance of 20% which, over a long period of years, had been

determined by the Commission and found by experience to be a sufficient depreciation reserve for this Company. These figures are significant, and reasonably lead to the inference that the change in conditions owing to the halt in progress of the Company was of material importance.

But, on the other hand, too much reliance must not be placed upon the experience of a single year and that an exceptional one in the history of the Company, especially when it is borne in mind that the true nature of depreciation reserve is to build up a fund to take care of necessary future replacements and particularly to meet extraordinary conditions such as extensive damage by sleet storms which experience shows occur at uncertain times. Thus it may be pointed out that in 1924 the ratio of the depreciation reserve which was then 23.29% fell, without decrease in depreciation percentage rate allowed, to 18.69% in 1927, and thereafter, at approximately the same depreciation rate allowance, did not reach so much as 21% in any year prior to 1933.

Furthermore in the estimate of necessary depreciation expense for the future, it is of importance to ascertain the amounts of realized depreciation in recent years. Net realized depreciation consists in the charge to the depreciation reserve based on the cost of the plant retired from service plus the cost of removal and any extraordinary repairs, less the salvage value thereof. From the same exhibit, A4, we find that the net realized depreciation for 1930 was $2,268,389; for 1931 it was $2,301,156 and for 1932, it was $2,294,292, while in 1933, it was $1,031,182. It thus appears that for three out of the last four years the amount of net realized depreciation was somewhat in excess of the Company's estimate for the necessary credit to depreciation reserve for 1934, to wit, $2,173,000, and very greatly in excess of the Commission's

allowance of $1,720,724. If the experience for 1933 is to be disregarded as entirely exceptional, there is no reasonable basis for a reduction in the Company's estimate for 1934. Nor may we properly disregard the fact disclosed in the evidence that in the last few months the business of the Company is again on the upward swing, although whether the renewed impetus will be sufficient to materially overcome in the near future the recent past losses is still problematical. We are dealing here with the near and not the distant future. Even the Company's estimates of renewed growth do not indicate a return to conditions approximating those of 1931 for at least two or three years in the future.

Looking at the evidence as a whole we conclude that the Company has underestimated, while the Commission has over estimated, the effect fairly attributable to the company's temporary partial loss of business in the past two years. As the proper depreciation allowance for the near future is, under the conditions now existing, necessarily an estimate only, it is obviously not susceptible of mathematical demonstration but should be the result of a reasonable judgment on consideration of all revelant facts. In our opinion the depreciation allowance at the percentage rate of 4% on the book cost of the plant now in service is reasonable and proper for the ensuing year. On this basis the allowance should be $2,000,000. The Company's estimate of net revenue for 1934 must therefore be adjusted by the addition of $173,000 thus making the estimated net revenue for 1934 $2,742,005.

This conclusion is, we think, not inconsistent with but rather confirmed by the luminous exposition of the subject of annual depreciation expense allowance to telephone companies in the very recent decision of the Supreme Court in *Lindheimer v. Ill. Bell Telephone Com-*

pany (Chicago Telephone Case) decided April 30, 1934. In that case the Court was dealing with the validity of the Commision's rates over a nine-year period in the past. Prior to the beginning of the litigation the Commerce Commission had ordered the Company to reduce its rates by an amount which the Court found was somewhat less than the amount of excessive charges to the depreciation reserve which had been made by the Company for the several years in the past under investigation. The principle announced and applied was that in a rate case where the rates fixed by the public authority are not in fact confiscatory unless the total amounts charged to depreciation expense by the Company can be established as necessary, the burden is on the Company to convincingly demonstrate the necessity for the amounts annually charged by it to depreciation expense. And it was held in that case the Company had failed to meet the burden of proof in this respect. The conclusion was based very largely on the striking contrast between the limited amount of accrued depreciation (only 8% as contended for by the Company) and the aggregate of the accumulated depreciation reserve which, over a period of years, had increased annually at the rate of more than $2,000,000 and represented for 1931, 26% of the book cost of the property; and was more than three times the aggregate of the Company's estimate of actual existing depreciation.

In this aspect, there is a marked difference in the facts between the experience of the Chicago Company with respect to its accumulated depreciation reserve, and that of the C. & P. Telephone Company of Baltimore. In the Chicago case the evidence required the conclusion that depreciation reserve had been accumulated at too high a rate over a long period of years in the past. In this case that situation does not exist as the history of the Company, in the matter of the reserve, indicates quite clearly

the contrary up to 1933. However, our special inquiry here is with the future rather than with the past. Whether the rates for depreciation have been too great or too small heretofore is not the controlling consideration. The question is what is a reasonable and proper allowance for the future. *Clark's Ferry Bridge Co. v. P. S. C. of Penna.*, 291 U. S. 227; *Smith v. Ill. Bell Tel. Co.*, 282 U. S. 133, 158.

RATE OF RETURN.

We have found the rate base for the whole property to be $39,541,921.27, and the net income to be $2,742,005. Reducing the figures in accordance with the stipulation to 85% thereof, as applicable to the intrastate property and business, we have $33,610,632, for property and $2,330,704 for net income. The order of the Commission requires a reduction of $850,000 in net revenue, which would leave the Company $1,480,704 a return of less than 4½% on the fair value of the property. Even if we should accept the lower estimate of the Commission for annual depreciation expense (to wit, $1,720,724) the net revenue available for return on the value of the Company's property, would be less than 5%. Counsel for the Commission concede that any rate less than 5½% under present conditions would be confiscatory. It necessarily results that the enforcement of the order of the Commission must be enjoined.

Here our constitutional function properly ends, but for the purpose of avoiding possible further litigation, and as customary in these rate cases, we will say that in our opinion, based on the evidence in this case, in the light of economic conditions generally which have prevailed in the last few years, and to a considerable extent are likely to continue for the coming year, if not longer, a return of 6% would not be confiscatory. If a return of 6% on $33,610,632 ($2,016,637) is deducted from the in-

trastate net revenue of $2,330,704, there remains $314,067 as a maximum possible rate reduction in the net revenues of the Company, (probably about $375,000 in gross revenues) from intrastate business, if the Commission deems it wise public policy to reduce the revenues to that extent as to which we express no opinion. Nor do we mean to indicate that under changed economic conditions rates which would yield only 6% return to the Company would not be confiscatory. As pointed out by counsel for the Commission 6% returns to well established public utilities were commonly held non-confiscatory during pre-war levels of prices; while in later years, in particular cases, returns of 8% were allowed, but in the present depression years returns have generally been lower, in some cases less than 6%. (Note 22).

With the rate base re-established on the basis heretofore approved by the Commission (and accepted by the Company prior to 1925) it is reasonable to anticipate that further valuation proceedings (with the expense and delay occasioned thereby) will be unnecessary and that future revision of the rates, if necessary, can well be related to adjustments of the rate of return to be allowed the Company from time to time. The Commission allowed the Company a return of 8% in 1912 and again in 1916, effective until 1920, when it was reduced to less than 6%, which in 1924 probably occasioned the demand by the Company for an increase in its rates and, when refused

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Note 22: In the Chicago Telephone Case, 3 F. Supp. 595, the rate of return allowed for the years 1923 to 1927, inclusive, was 7½%; for 1928 to 1930, 7%; for 1931, 6½%, and for 1933, 5½%. The court fairly said:

> "A public utility enjoying the advantages of plaintiff is not entitled to great earnings made by many undertakings during periods of great prosperity. On the other hand, its return in times of business adversity should not be reduced to the extent that the earnings of many private corporations have been impaired. The range of from 7½% to 5½% as found in this case gives weight, in our opinion, to all the elements which under the ruling of the Supreme Court we are required to consider."

by the Commission, led to the Court litigation, resulting in an increase in the rate base, but with a return limited to 6%. It may be noted that, if the Commission in 1925, in view of the then prevailing economic conditions, had allowed the Company a return of 8% on the then long established rate base, the practical result would have been substantially the same, and the litigation probably avoided; and if the rate base had thus been continued without the increase then made, the Commission, in this case, by reducing the rate of return to 6%, in view of the prevailing economic conditions, would have produced practically the same result now attained. The principle involved is that when a rate base for a utility has been once fairly established, changes in rates necessary from time to time in the interest of the public or the Company, can nearly always be effectively made by adjustment of the rate of return, without the expense of a new valuation proceeding.

It results from our opinion that the plaintiff is entitled to final injunction against the enforcement of the order of the Commission.

We express our indebtedness to counsel for the parties for their evident thorough preparation of the case for our consideration and for their well presented oral arguments and briefs.

THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY OF BALTIMORE CITY, a Corporation,

Plaintiff.

vs.

HAROLD E. WEST, J. FRANK HARPER AND STEUART BURCELL, the Persons Constituting the Public Service Commission of Maryland,

Defendants.

IN THE

District Court of the United States

FOR THE

DISTRICT OF MARYLAND.

IN EQUITY.

No. 2240.

(Filed May 11, 1934.)

CHARLES McHENRY HOWARD, RAYMOND S. WILLIAMS, RALPH A. VAN ORSDEL and T. BAXTER MILNE for Plaintiff.

RICHARD F. CLEVELAND, HERMAN M. MOSER and JOHN HENRY LEWIN for Public Service Commission.

RANDOLPH BARTON, JR., and FORREST BRAMBLE for Retail Merchants Association.

Findings Of Fact.

The above entitled case having come on to be heard on the pleadings, on the application of the plaintiff for a preliminary injunction (and the parties having stipulated that on the evidence to be produced there should

also be a final decree on the merits) and the parties having appeared by their respective counsel and offered evidence in support of their respective contentions; the Court having heard arguments and being advised in the premises now finds as the

FINDINGS OF FACT:

1. The fair value of all the plaintiff's property, including working capital, cash capital, materials and supplies, considered as a going concern, as of December 31, 1933, is $39,541,921.27, of which 85% thereof, to wit, $33,610,632, is used and useful in the public service in its intra-state operations;

2. A fair allowance to the plaintiff company for working capital separately considered is $1,000,000 for its whole operation and $850,000 for its intra-state activities;

3. Going value has not been separately estimated but is included in the total $39,541,921.27.

4. We find the reasonable and proper allowance for depreciation expense from the whole revenues of the plaintiff (both intra and inter state) will be $2,000,000 for 1934.

5. We find the probable net revenue of the Company for 1934 will be $2,742,005, resulting from all its activities interstate and intra-state, and 85% thereof, to wit, $2,330,704, will result from intra-state activities alone.

6. We further find that the Maryland Public Service Commission has ordered a reduction in net revenues of the plaintiff derived from purely intra-state activities in the amount of $850,000 for 1934 and until further order. This deduction if made from plaintiff's net revenues ap-

plicable to its intra-state business alone will leave net revenue sufficient to produce a return on the fair value of the plaintiff's property at the rate of less than 4½%. We find that a return of less than 6% would be confiscatory under present conditions.

We refer to the opinion herewith filed for more detailed statement of facts and figures on which these ultimate findings are based.

Conclusions Of Law.

From the above findings of fact we conclude as a matter of law:

1. The order of the Public Service Commission of Maryland dated November 28, 1933, herein sought to be enjoined is invalid and null and void because it deprives the plaintiff of its property without due process of law, under the 14th Amendment to the Federal Constitution;

2. Said order is in legal effect confiscatory of the plaintiff's property.

3. The plaintiff is therefore entitled to an interlocutory and final injunction as prayed for in this case.

4. Plaintiff should recover its taxable costs herein.

MORRIS A. SOPER,
United States Circuit Judge,

WILLIAM C. COLEMAN,
United States District Judge.

W. CALVIN CHESNUT,
United States District Judge.

[fol. 838] IN UNITED STATES DISTRICT COURT

DISTRICT OF MARYLAND

In Equity. No. 2240

THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY OF BALTIMORE CITY, Plaintiff

vs.

HAROLD E. WEST, J. FRANK HARPER and STUART PURCELL, the persons constituting the Public Service Commission of Maryland, Defendants

FINAL DECREE—Filed June 8, 1934

This cause came on to be heard before the Honorable Morris A. Soper, Circuit Judge of this Circuit, the Honorable William C. Coleman and the Honorable W. Calvin Chesnut, District Judges of this Circuit, upon the motion of the Plaintiff for an interlocutory injunction in accordance with the prayer of its Bill of Complaint herein, and evidence in support of the respective contentions of the parties having been adduced and received in open Court, and said motion and this cause having been argued by counsel for all of the parties and it having been stipulated by the parties at said hearing that this cause was then and there submitted for final decree, and not merely for the determination of the application for interlocutory injunction only, upon the evidence so adduced at said hearing; and the Court finding that the order of the Public Service Commission of Maryland, No. 24065, dated November 28th, 1933, as amended by the order of said Commission, No. 24985, passed on April 2nd, 1934, is invalid and null and void because it would deprive the Plaintiff of its property without due process of law, under the Fourteenth Amendment of the Federal Constitution, and that said order is in legal effect confiscatory of the Plaintiff's property and if [fol. 839] enforced would result in immediate, irreparable and continuing injury, loss and damage to the Plaintiff; it is accordingly, this 8th day of June, nineteen hundred and thirty-four, by the District Court of the United States, for the District of Maryland:

Adjudged, ordered and decreed that the Defendants, Harold E. West, J. Frank Harper and Steuart Purcell, the persons constituting the Public Service Commission of Maryland, their and each of their successors, officers, agents, employees and attorneys, be and they are hereby severally enjoined and restrained both temporarily and permanently, from any attempt to compel the Plaintiff, its officers, agents or employees, to observe or put in force or keep in effect any schedule of rates or charges for telephone services reducing the revenue of the Plaintiff as required by said order of the Public Service Commission of Maryland, No. 24065, dated November 28, 1933 as amended by said order of said Commission, No. 24985, dated April 2, 1934, and from taking or initiating any steps or proceedings against the Plaintiff, its officers, agents or employees, to enforce any penalties or any other remedy for disregarding the requirements of said order.

And it is further ordered that the amount of the recoverable costs in this cause to be allowed to the plaintiff be hereafter separately determined.

Morris A. Soper, U. S. Circuit Judge. William C. Coleman, U. S. District Judge. W. Calvin Chesnut, U. S. District Judge.

[fol. 840] In United States District Court

[Title omitted]

Petition for Appeal—Filed July 13, 1934

To the Honorable, the Judges of the United States District Court for the District of Maryland:

Harold E. West, J. Frank Harper and Steuart Purcell, constituting the Public Service Commission of Maryland, defendants in the above entitled cause, pray that they may be permitted to take an appeal from the decree entered on the 8th day of June 1934 to the Supreme Court of the United States, for the reasons specified in the assignment of errors, which is filed herewith.

These petitioners further pray that the amount of security for costs may be fixed by the order allowing the appeal.

Richard F. Cleveland, Solicitor for Harold E. West, et al., Petitioners.

Dated July 13th, 1934.

[fol. 841] IN UNITED STATES DISTRICT COURT

[Title omitted]

ASSIGNMENT OF ERRORS—Filed July 13, 1934

Now come Harold E. West, J. Frank Harper and Steuart Purcell, constituting the Public Service Commission of Maryland, defendants in the above entitled cause, and file the following assignment of errors upon which it will rely in the prosecution of the appeal herewith petitioned for in said cause from the decree of this Court entered on the 8th day of June, 1934:

1. The Court erred in finding that order No. 24065 of said defendants, as such Public Service Commission of Maryland, dated November 29, 1933 as amended by order No. 24985, dated April 2, 1934, is invalid and null and void because it would deprive the plaintiff herein of its property without due process of law under the Fourteenth Amendment of the Federal Constitution.

2. The Court erred in finding that the said order as so amended is in legal effect confiscatory of the plaintiff's [fols. 842-846] property, and if enforced would result in immediate, irreparable and continuing loss and damage to the said plaintiff.

3. The Court erred in granting the injunction prayed for by the said plaintiff against the said defendants, their officers, agents or employees, enjoining and restraining them, both temporarily and permanently, from observing, putting in force or keeping in effect any schedule of rates or charges for telephone services pursuant to said order of the said defendants so amended.

Wherefore these defendants pray that the said decree may be reversed, and for such other and further relief as to the Court may seem just and proper.

Richard F. Cleveland, Solicitor for Harold E. West, et al., Petitioners.

Dated July 13, 1934.

[fol. 847] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER ALLOWING APPEAL—Filed July 13, 1934

The petition of Harold E. West, J. Frank Harper and Steuart Purcell, constituting the Public Service Commission of Maryland for an appeal from the decree of this Court dated June 8, 1934 in the above entitled cause is hereby granted and the appeal is allowed upon the petitioner filing a bond for costs in the sum of five hundred Dollars ($500.00) with sufficient security and under the conditions required by law.

Morris A. Soper, United States Circuit Judge.

Dated July 13, 1934.

[fols. 848 & 849] Bond on Appeal for $500,00, approved and filed July 13, 1934, omitted in printing.

[fols. 850 & 851] Citation in usual form showing service on Charles McHenry Howard et al. Filed July 13, 1934. Omitted in printing.

[fol. 852] IN UNITED STATES DISTRICT COURT

ORDER EXTENDING TIME FOR PREPARATION OF RECORD—Filed August 20, 1934

Good cause appearing therefor, it is hereby ordered that the time within which to prepare the transcript of record on appeal and to docket the appeal of the Defendant in the above-entitled cause in the Supreme Court of the United States, be, and the same is hereby, extended to and including the twenty-fifth day of September, 1934.

Dated August 20, 1934.

Wm. C. Coleman, United States District Judge for the District of Maryland.

The Chesapeake and Potomac Telephone Company of Baltimore City, Plaintiff and Appellee in the above cause, hereby consents to the passage of the above Order.

Charles McHenry Howard, Raymond S. Williams, R. A. Van Oradel, T. Baxter Milne, Solicitors for The Chesapeake and Potomac Telephone Company of Baltimore City, Plaintiff-Appellee.

[fol. 853] IN UNITED STATES DISTRICT COURT

ORDER EXTENDING TIME FOR PREPARATION OF RECORD—Filed September 24, 1934

Good cause appearing therefor, it is hereby Ordered that the time within which to prepare the transcript of record on appeal and to docket the appeal of the Defendants in the above entitled cause in the Supreme Court of the United States, be and the same is hereby further extended to and including the 25th day of October, 1934.

Dated September 24th, 1934.

Morris A. Soper, United States Circuit Judge sitting in U. S. District Court for the District of Maryland.

[fol. 854] IN UNITED STATES DISTRICT COURT

ORDER EXTENDING TIME FOR PREPARATION OF RECORD—Filed October 23, 1934

Good cause appearing therefor, it is hereby Ordered that the time within which to prepare the transcript of record on appeal and to docket the appeal of the Defendants in the above entitled cause in the Supreme Court of the United States, be and the same is hereby further extended to and including the 26th day of November, 1934.

Dated October 23rd, 1934.

William C. Coleman, United States District Judge for the District of Maryland.

[fol. 855] IN UNITED STATES DISTRICT COURT

ORDER EXTENDING TIME FOR PREPARATION OF RECORD—Filed November 22, 1934

Good cause appearing therefor, it is hereby Ordered that the time within which to prepare the transcript of record on appeal and to docket the appeal of the Defendants in the above entitled cause in the Supreme Court of the United States, be and the same is hereby further extended to and including the 15th day of January, 1935.

Dated November 22, 1934.

W. Calvin Chesnut, United States District Judge for the District of Maryland.

[fol. 856] IN UNITED STATES DISTRICT COURT

[Title omitted]

STIPULATION AS TO STATEMENT OF EVIDENCE AND WAIVER OF NOTICE OF FILING—Filed January 4, 1935

There having been filed on the 4th day of January, 1935, a Statement of Evidence in this cause, comprising 656 pages of the testimony of the witnesses in a condensed, narrative form, and copies of Plaintiff's Exhibits A-1 to A-56, inclusive, and Defendants' Exhibits D-2 to D-21, inclusive, the same having been examined and read by the undersigned Solicitors for the respective parties to this cause:

It is hereby stipulated and agreed by and between the parties hereto by their respective counsel, that said Statement of Evidence is a statement in simple and condensed form of all the testimony, documentary evidence, and exhibits, introduced in the above cause, which are relevant and material for the decision of the questions presented by the appeal in this cause to the Supreme Court of the United States.

It is further stipulated and agreed that the copies of Plaintiff's Exhibits A-1 to A-56, inclusive, and Defendants' Exhibits D-2 to D-21, inclusive, included in said Statement of Evidence, are true and correct copies of the original exhibits filed in this Court in the hearing in the above en-

titled cause, and that they shall be treated and accepted in all respects the same as the original exhibits filed in this cause, and that the same may be incorporated in the transcript of record by the Clerk of this Court on the appeal in [fol. 857] this cause to the Supreme Court of the United States.

It is further stipulated and agreed that all parties hereto have received due and legal notice of the Statement of Evidence as required by Equity Rule 75; that service of such notice is acknowledged and the parties waive further notice of filing said Statement of Evidence.

It is stipulated and agreed that said Statement of Evidence, including the testimony of the witnesses and the exhibits attached thereto, may be approved by a Judge of the United States District Court for the District of Maryland, without further notice to the parties hereto and when so approved, may be filed in the Clerk's office and become a part of the record on the appeal in this cause to the Supreme Court of the United States.

Richard F. Cleveland, Solicitor for Defendants-Appellants. Charles McH. Howard, Raymond S. Williams, T. Baxter Milne, R. A. Van Orsdel, Solicitors for Plaintiff-Appellee.

Dated the 4th day of January, 1935.

[fol. 858] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER APPROVING STATEMENT OF EVIDENCE—Filed Jan. 4, 1935

This cause came on to be further heard upon proceedings for the approval of the Statement of Evidence and it appearing to the Court that said Statement of Evidence was lodged in due time with the Clerk of this Court, and Plaintiff received notice of such lodgment and waived notice for the approval of same by this Court, and it further appearing to the Court that the testimony has been reduced to a condensed, narrative form, and the parties having stipulated and agreed as to the copy exhibits included in said Statement of Evidence.

It is therefore ordered, adjudged and decreed that the Statement of Evidence comprising 656 pages of testimony and Plaintiff's Exhibits A-1 to A-56, inclusive, and Defendants' Exhibits D-2 to D-21, inclusive, be and the same are hereby settled, allowed, and approved as a full, true, correct, and properly prepared statement in simple and condensed form, of all the testimony, documentary evidence, and exhibits, introduced in the above cause, which are relevant, material, and essential for the decision of the questions presented by the appeal herein:

It is further ordered, adjudged, and decreed that said Statement of Evidence, as filed in the Clerk's office, shall be incorporated in the transcript of record by the Clerk of this Court on the appeal of this cause to the Supreme Court of the United States.

W. Calvin Chesnut, United States States District Judge.

Dated at Baltimore, Maryland, January 4, 1935.

[fol. 659] In United States District Court

[Title omitted]

Stipulation for Transcript of Record—Filed January 4, 1935

To the Clerk of the United States District Court for the District of Maryland:

It is hereby stipulated and agreed by and between the parties hereto, by their respective counsel, that the transcript of record for appeal in the above entitled cause to the Supreme Court of the United States, shall consist of the following portions of the record in this case, the same as if directed by praecipe for record, and you are requested to incorporate in such transcript, certified as required by law, the following:

1. Bill of Complaint and Plaintiff's Exhibit A attached thereto, together with Amending Order, dated April 2, 1934, of the Public Service Commission of Maryland.

2. Order of December 13, 1933, granting Temporary Restraining Order.

3. Docket entry, December 13, 1933, "Bond Approved and Filed."

4. Answer of Defendants filed December 22, 1933.

5. Docket entry, March 6, 1934, Order of Court setting the application for interlocutory injunction herein for hearing March 12th next and, pursuant to Sec. 380, Title 28 U. S. C. A., calling to assistance to hear and determine same Hon. Morris A. Soper and Hon. W. Calvin Chesnut, filed.

6. Stipulation as to certain operating expenses filed March 16, 1934.

[fol. 860] 7. Stipulation as to land and certain buidings, filed March 16, 1934.

8. Amended Stipulation as to intrastate business, filed March 31, 1934.

9. Docket entry, April 3, 1934, "Order dated April 2, 1934, of Public Service Commission of Maryland, amending nunc pro tunc order No. 24065 dated November 28, 1933."

10. Docket entry, April 3, 1934, "Assent of Principal and Surety under Bond to the amendments by order dated April 2, 1934, of Public Service Commission of Maryland to order No. 24065 dated November 28, 1933.

11. Statement of Evidence.

12. Stipulation submitting this cause for final decree, filed April 3, 1934.

13. Opinion of United States District Court filed May 11, 1934.

14. Findings of Fact and Conclusions of Law of United States District Court, filed May 11, 1934.

15. Final Decree entered June 8, 1934.

16. Petition for appeal, filed July 13, 1934.

17. Assignments of Error, filed July 13, 1934.

18. Statement and Revised Statement showing basis of jurisdiction of the Supreme Court of the United States.

19. Order allowing appeal, entered July 13, 1934.

20. Approved Appeal Bond, filed July 13, 1934.

21. Citation in said cause issued July 13, 1934, together with proof of service.

22. Notice to Appellee given pursuant to Rule 12, Paragraph 2, Rules of the Supreme Court of the United States, and proof of service.

23. Order extending time for filing transcript of record, entered August 20, 1934.

24. Order extending time for filing transcript of record, entered September 24, 1934.

25. Order extending time for filing transcript of record, entered October 23, 1934.

[fol. 861] 26. Order extending time for filing transcript of record, entered November 22, 1934.

27. Stipulation as to Statement of Evidence and Waiver of Notice of filing, filed January 4, 1935.

28. Order approving Statement of Evidence, entered Jan. 4, 1935.

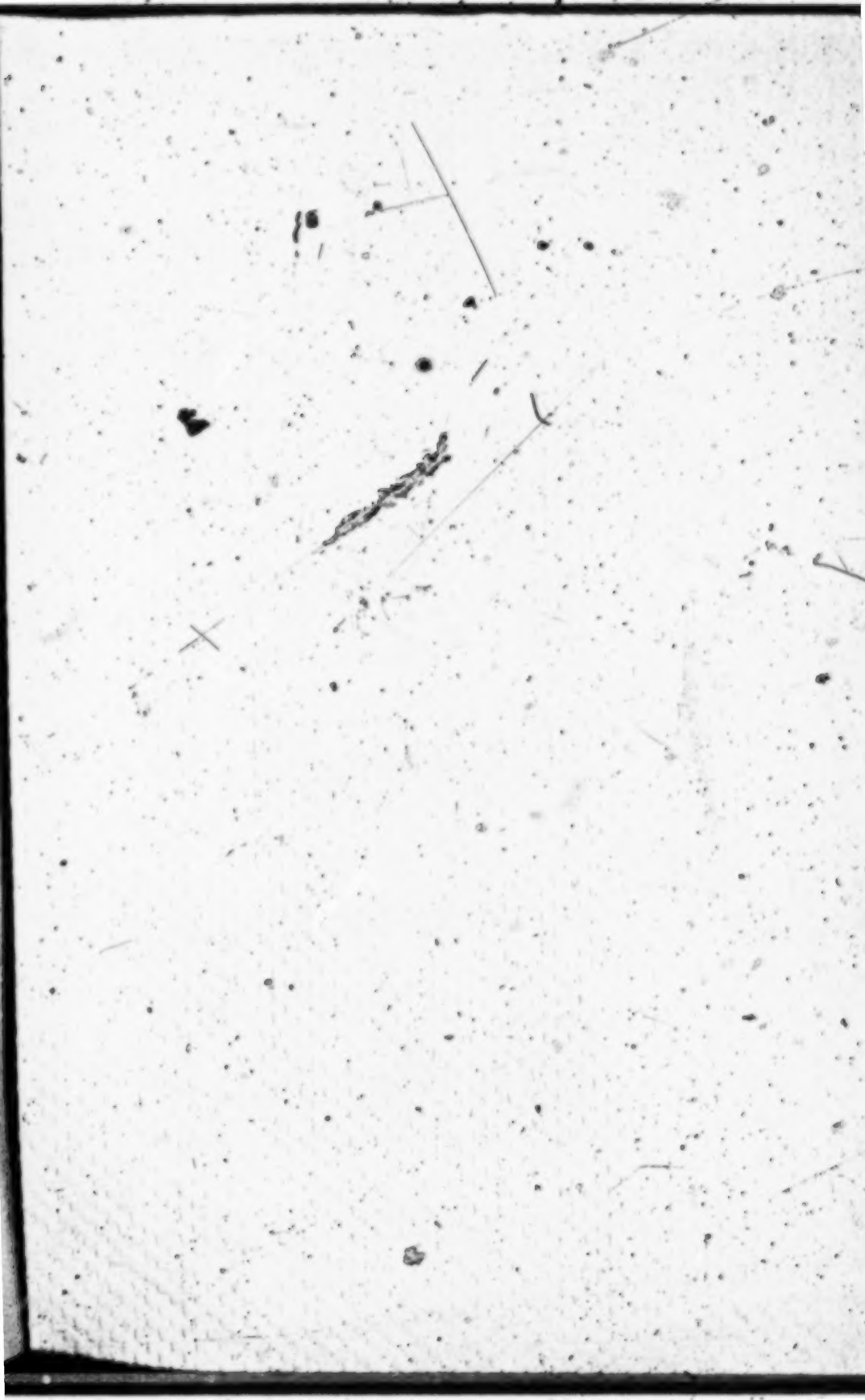
29. This Stipulation for transcript of record, dated Jan. 4, 1935.

Richard F. Cleveland, Solicitor for Harold E. West et al., Defendants-Appellants. Charles McH. Howard, Raymond S. Williams, R. A. Van Orsdel, T. Baxter Milne, Solicitors for The Chesapeake and Potomac Telephone Company of Baltimore City, Plaintiff-Appellee.

Dated the 4th day of January, 1935.

[fols. 862-864] Clerk's Certificate to transcript omitted in printing.

[fol. 865] PLAINTIFF'S EXHIBITS



THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY OF BALTIMORE CITY

C. & P. TEL. CO. OF B.C. v. WEST et. al. U.S. DIST. CT. EQ. No. 2240
Plaintiff's Exhibit A-1
Witness GRETZ
Date 2-16-33 Rec'd 2-17-33

COMPARATIVE BALANCE SHEET AS OF DECEMBER 31st OF EACH YEAR
1923 to 1932, Inclusive

	ASSETS	Dec. 31, 1923	Dec. 31, 1924	Dec. 31, 1925	Dec. 31, 1926	Dec. 31, 1927	Dec. 31, 1928	Dec. 31, 1929	Dec. 31, 1930	Dec. 31, 1931	Dec. 31, 1932
1.	Intangible Capital	$ 33,926.74	$ 31,505.08	$ 29,083.42	$ 31,724.36	$ 31,730.36	$ 31,730.36	$ 31,730.36	$ 33,622.31	$ 33,622.31	$ 33,622.31
2.	Right of Way	732,683.28	765,583.30	787,435.11	819,440.24	847,645.06	872,856.86	893,225.08	909,843.70	929,897.11	934,220.20
3.	Land and Buildings	1,968,069.29	2,162,902.60	2,610,110.55	2,884,002.02	3,041,420.51	3,083,318.98	3,270,365.00	3,536,142.83	3,542,935.95	3,543,067.16
4.	Central Office Equipment	6,976,134.03	6,808,618.44	7,843,864.89	9,652,792.10	10,299,167.35	10,669,451.66	10,818,121.10	11,556,661.17	11,664,920.58	11,905,437.93
5.	Station Equipment	3,786,258.56	4,205,869.13	4,525,538.59	4,971,390.58	5,574,884.58	5,820,911.16	6,182,862.11	6,619,654.28	7,090,689.24	7,153,860.35
6.	Exchange Lines	11,026,039.61	12,461,500.97	13,930,502.79	15,350,097.20	16,738,049.76	17,578,360.27	18,686,970.95	19,783,789.85	20,613,639.92	20,813,845.77
7.	Toll Lines	3,339,567.31	3,422,597.77	3,690,345.07	3,737,365.98	3,717,151.80	4,025,450.24	4,223,211.14	4,402,109.52	4,440,208.34	4,477,819.57
8.	Other Plant	178,831.07	206,260.72	247,822.00	288,971.56	301,713.98	303,781.96	309,402.46	336,969.35	338,221.85	337,636.69
9.	General Equipment	546,379.22	622,698.65	716,253.37	743,422.14	764,513.64	783,431.03	959,536.21	930,505.03	894,739.76	791,072.91
10.	Construction Work in Progress	315,590.29	928,966.24	1,021,521.62	249,086.72	254,954.26	118,215.95	288,374.97	192,071.55	252,029.10	1,363.68
11.	Total Fixed Capital and Progress	28,003,479.41	31,816,503.10	35,402,487.41	38,728,282.90	41,581,201.10	43,288,508.67	46,660,799.38	48,301,453.59	49,820,904.15	49,991,946.57
12.	Miscellaneous Investments	-	-	-	7,221.86	-	4,430.02	3,919.95	4,507.28	4,507.28	4,507.28
13.	Cash and Deposits	52,997.51	86,257.47	169,741.37	147,497.63	106,697.93	104,435.23	197,815.68	132,842.13	359,535.21	367,855.87
14.	Marketable Securities	550.00	550.00	550.00	650.00	600.00	600.00	600.00	300.00	150,300.00	150,300.00
15.	Bills Receivable	-	-	-	-	599.68	599.68	599.68	-	-	-
16.	Accounts Receivable	648,892.39	664,321.28	789,438.23	854,329.81	836,111.55	933,053.16	1,372,391.96	1,343,718.15	1,393,373.59	1,217,997.81
17.	Materials and Supplies	275,445.56	262,492.96	254,251.41	150,654.14	298,055.65	187,560.98	281,166.13	279,465.65	154,432.44	154,333.63
18.	Accrued Income Not Due	-	-	-	-	3,866.60	3,345.70	1,724.11	2,787.52	2,599.20	1,854.52
19.	Prepayments	39,393.70	100,166.12	100,489.33	153,281.45	133,256.35	124,276.50	167,412.87	166,340.69	179,644.69	122,203.84
20.	Other Deferred Debits	59,255.01	156,145.02	37,093.51	22,099.86	75,209.77	30,362.74	117,986.17	115,287.37	190,385.17	91,427.02
21.	Total Assets	29,078,013.58	33,088,436.95	36,754,051.26	40,064,017.67	43,035,810.63	44,677,172.68	47,804,415.93	50,346,712.36	52,255,681.74	52,101,726.74
	LIABILITIES										
22.	Capital Stock - Common	17,174,300.00	17,174,300.00	17,174,300.00	26,824,300.00	26,824,300.00	26,824,300.00	26,824,300.00	30,000,000.00	30,000,000.00	30,000,000.00
23.	Capital Stock - Preferred	2,997,100.00	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00
24.	Premiums on Capital Stock	15,375.41	15,419.00	15,419.00	15,419.00	15,419.00	15,419.00	15,419.00	15,419.00	15,419.00	15,419.00
25.	Advances from System Corporations for Construction, etc.	125,000.00	4,275,000.00	7,800,000.00	-	1,972,772.59	2,872,772.59	4,097,772.59	2,875,000.00	3,825,000.00	3,873,090.00
26.	Bills Payable	-	-	-	-	132,610.52	502,240.16	684,775.45	848,819.90	1,013,312.00	1,144,817.01
27.	Accounts Payable	571,454.36	797,074.76	775,820.13	749,081.01	811,579.67	768,188.49	1,128,219.20	1,032,882.15	1,132,478.37	779,445.11
28.	Accrued Liabilities Not Due	525,136.34	450,372.16	814,127.53	684,782.98	687,392.51	712,886.56	718,026.08	780,708.55	807,040.66	718,287.33
29.	Liability for Provident Funds	182,161.00	182,161.00	250,000.00	380,000.00	385,602.59	10,100.00	1,800.00	2,300.00	800.00	3,000.00
30.	Other Deferred Credit Items	99.03	216.81	88,256.32	103,031.94	35.42	30.77	5,004.12	2,225.95	3,220.67	556.73
31.	Total Fixed Capital Reserves	6,439,795.99	6,436,239.99	6,630,669.36	7,184,003.87	7,988,715.23	8,647,484.85	9,471,300.66	9,656,147.21	9,887,247.78	10,229,980.45
32.	Surplus and Undivided Profits	1,044,891.43	797,469.23	819,459.42	1,153,468.87	1,266,133.10	1,523,750.26	1,857,798.83	2,131,809.62	2,371,465.26	2,517,209.11
33.	Total Liabilities	29,078,013.58	33,088,436.95	36,754,051.26	40,064,017.67	43,035,810.63	44,677,172.68	47,804,415.93	50,346,712.36	52,255,681.74	52,101,726.74

EXHIBIT NO. A-1

C. & P. TEL. CO. OF B.C.
v. WEST et al.
U.S. DIST. CT. EQ. No. 3260
Plaintiff's Exhibit A-2
Witness GRETZ
Date 3/19/34 Reporter

THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY OF BALTIMORE CITY

COMPARATIVE BALANCE SHEETS - DECEMBER 31, 1932 AND 1933

	Classification in Effect Prior to January 1, 1933		Classification in Effect From January 1, 1933			
		December 31, 1932	January 1, 1933	December 31, 1933		
	Assets:				**Assets:**	
1	Intangible Capital	$ 33,822.31	$ 6,960.55	$ 6,960.55	Organization, Franchises, etc.	1
			26,661.76	26,661.76	Undistributed Cost of Property	
3	Right of Way	934,220.20	919,116.10	922,296.52	Right of Way	3
4	Land and Buildings	3,543,067.16	3,674,395.37	3,461,374.09	Land and Buildings	4
5			25,972.11	230,177.14	Land included in Construction Work in Progress	5
6	Central Office Equipment	11,905,437.93	11,924,429.43	11,879,472.77	Central Office Equipment	6
7	Station Equipment	7,153,860.36	8,316,965.57	8,333,777.81	Station Equipment	7
8	Drop Wires	1,160,785.79				
9	Pole Lines	5,387,085.98	5,356,869.45	5,326,865.24	Pole Lines	9
10	Aerial Cable	5,501,956.84	12,731,707.70	12,836,734.52	Cable	10
11	Underground and Submarine Cable	7,154,984.15				
12	Aerial Wire (Other than Drop Wires)	2,084,087.94	2,116,215.73	2,148,553.75	Aerial Wire	12
13	Underground Conduit	4,002,764.84	4,011,295.44	4,080,941.12	Underground Conduit	13
14	Interest During Construction	337,636.69	*	*	Interest During Construction	14
15	General Equipment	791,072.91	451,069.04	432,183.65	Furniture and Office Equipment	15
			428,787.84	361,348.51	Vehicles and Other Work Equipment	
17	Construction Work in Progress	1,363.68	1,363.68	4,831.90	Construction Work in Progress (excl. Land in Progress)	17
18	Total Fixed Capital and Progress	49,991,948.57	49,991,948.57	50,025,298.85	Total Telephone Plant	18
19	Advances to System Corp. for Construction	-	-	-	Investments in Affiliated Companies	19
20	Investment Securities	-	150,400.00	38,022.26	Other Investments	20
21	Marketable Securities	150,300.00				
22	Miscellaneous Investments	4,507.28	4,507.28	16,658.70	Miscellaneous Physical Property	22
23	Sinking Fund Assets	-	-	-	Sinking Funds	23
24	Cash and Deposits	367,555.87	367,555.87	143,873.92	Cash and Special Deposits	24
25	Materials and Supplies	154,333.83	154,333.83	215,640.54	Materials and Supplies	25
26	Bills Receivable	-				
27	Accounts Receivable	1,217,397.81	1,220,149.51	1,180,843.62	Other Current Assets	27
28	Accrued Income Not Due	1,854.58				
29	Prepayments	122,305.84				
30	Other Deferred Debits	91,487.03	213,634.98	499,450.61	Other Deferred Debit Items	30
31	Total Assets	58,101,726.74	58,102,717.84	58,119,768.48	Total Assets	31
	Liabilities:				**Liabilities:**	
32	Capital Stock - Common	30,000,000.00	30,000,000.00	30,000,000.00	Capital Stock - Common	32
33	- Preferred	3,000,000.00	3,000,000.00	3,000,000.00	- Preferred	33
34	Premium on Capital Stock	15,419.00	15,419.00	15,419.00	Premium on Capital Stock	34
35	Funded Debt	-	-	-	Funded Debt	35
36	Advances from System Corp. for Construction	3,675,000.00	3,675,000.00	3,650,000.00	Advances from Affiliated Companies	36
37	Bills Payable	1,164,817.01	1,164,817.01	1,308,721.83	Other Long Term Debt	37
38	Accounts Payable	779,445.11	780,017.83	736,631.96	Current Liabilities	38
39	Accrued Liabilities Not Due	716,867.23	716,691.44	689,803.16	Accrued Liabilities Not Due	39
40	Liability for Provident Funds	3,000.00	3,000.00	3,000.00	Insurance and Provident Reserves	40
41	Other Deferred Credit Items	988.73	988.20	894.77	Deferred Credit Items	41
42	Total Fixed Capital Reserves (Depr.)	10,289,980.45	10,289,980.45	11,483,387.56	Depreciation Reserves	42
43	Surplus - Unappropriated	3,317,909.11	3,317,909.11	2,943,840.30	Unappropriated Surplus	43
44	Total Liabilities	58,101,726.74	58,102,717.84	58,119,768.48	Total Liabilities	44

* Interest during construction distributed over related property accounts effective January 1, 1933.

C. & P. TEL. CO. OF D.C. v. WEST et al. D.C. Dist. Ct. Eq. No. 2660
Plaintiff's Exhibit No. 43
Witness GRETZ
Date _____ Rec'd _____

THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY OF BALTIMORE CITY

ANALYSIS OF ADDITIONS TO AND RETIREMENTS FROM FIXED CAPITAL, BY ACCOUNTS

NINE YEARS, 1934 to 1942, Inclusive

Accounts		New Plant Placed	Plant Purchased	Service Wire Placed	Total Gross Additions	Plant Retired from Service	Plant Sold	Service Wire Abandoned	/Total Plant Sold, Removed, or Abandoned	Net Additions	Plant Beginning of Period	Plant End of Period
205	Intangible Capital	$ [illegible]			$ [illegible]	$ 7,954.95			$ 7,954.95	$ [illegible]	$ [illegible]	$ [illegible]
207-01	Exchange Right of Way	880,954.18			880,954.18	66,858.18	$ 880.80		67,738.98	[illegible]	[illegible]	[illegible]
207-02	Toll Right of Way	42,344.86			42,344.86	37,298.80	3,990.00		41,288.80	[illegible]	[illegible]	[illegible]
207	Total Right of Way	923,299.04			923,299.04	104,661.98	4,868.80		109,375.18	[illegible]	[illegible]	[illegible]
211	Land	807,719.88			807,719.88	4,430.08			4,430.08	[illegible]	[illegible]	[illegible]
212	Buildings	1,469,986.84			1,469,986.84	117,880.81			117,880.81	[illegible]	[illegible]	[illegible]
210	Total Real Estate	2,277,706.72			2,277,706.72	122,310.89			122,310.89	[illegible]	[illegible]	[illegible]
221	C. O. Telephone Equipment	7,946,497.72	$ 10,621.81		7,957,119.85	1,858,034.48	254,035.90		2,097,668.38	[illegible]	[illegible]	[illegible]
222	Other Equipment of C. O.	456,621.84	850.88		456,472.74	870,717.87	1,800.40		873,981.87	[illegible]	[illegible]	[illegible]
220	Total C. O. Equipment	8,403,119.56	11,472.73		8,413,592.97	2,149,248.35	240,868.30		2,971,654.73	[illegible]	[illegible]	[illegible]
231	Station Apparatus	4,401,128.60	620,127.31		5,021,275.91	4,933,128.06			4,933,128.06	[illegible]	[illegible]	[illegible]
232	Station Installations	1,217,081.75		$213,618.85	1,430,697.45	34,866.08		$1,066,776.82	1,068,642.90	[illegible]	[illegible]	[illegible]
227	Interior Block Wire	88,460.37		44,138.49	132,598.86	22,815.58		159,871.68	166,680.17	[illegible]	[illegible]	[illegible]
234	Private Branch Exchanges	2,040,718.40	9,888.52		2,050,606.97	1,309,284.61			1,309,284.61	[illegible]	[illegible]	[illegible]
235	Booths and Special Fittings	730,888.84			730,888.84	288,078.00			288,078.00	[illegible]	[illegible]	[illegible]
230	Total Station Equipment	10,481,686.04	630,016.83	257,946.34	11,369,649.21	6,718,818.27		1,166,648.15	7,885,808.76	[illegible]	[illegible]	[illegible]
241	Exchange Pole Lines	3,809,886.13	4,486.81		3,814,722.94	2,061,883.60	18,741.77		2,072,385.37	[illegible]	[illegible]	[illegible]
242	Exchange Aerial Cable	4,186,807.15			4,186,807.15	1,414,971.48	1,950.85		1,416,921.78	[illegible]	[illegible]	[illegible]
243	Exchange Aerial Wire	2,305,788.87	8,077.04	207,481.56	2,513,321.07	1,480,888.38		889,697.98	2,370,586.36	[illegible]	[illegible]	[illegible]
244	Exchange Underground Cond.	2,014,901.44			2,014,901.44	106,797.81	1,827.73		108,625.60	[illegible]	[illegible]	[illegible]
245	Exchange Underground Cable	4,486,947.84			4,486,947.84	1,327,621.97	970.44		1,327,988.41	[illegible]	[illegible]	[illegible]
246	Exchange Submarine Cable	87,884.97			87,884.97	17,720.47			17,720.47	[illegible]	[illegible]	[illegible]
240	Total Exchange Lines	16,973,216.41	1,813.85	207,481.56	17,184,511.82	6,409,178.49	18,990.15	889,697.98	7,317,866.62	[illegible]	[illegible]	[illegible]
251	Toll Pole Lines	1,188,888.48			1188,888.48	910,899.43	18,488.97		929,388.40	[illegible]	[illegible]	[illegible]
252	Toll Aerial Cable	690,810.30			690,810.30	74,688.48	678.15		75,188.68	[illegible]	[illegible]	[illegible]
253	Toll Aerial Wire	548,418.82			548,418.82	684,849.11	83,964.15		688,881.26	[illegible]	[illegible]	[illegible]
254	Toll Underground Conduit	84,401.88			84,401.88	2,873.14			2,873.14	[illegible]	[illegible]	[illegible]
255	Toll Underground Cable	487,088.28			487,088.28	97,447.28			97,447.28	[illegible]	[illegible]	[illegible]
256	Toll Submarine Cable	24,898.97			24,898.97	28,888.47			28,888.47	[illegible]	[illegible]	[illegible]
250	Total Toll Lines	2,888,888.88			2,888,888.88	1,788,888.88	88,888.88		1,888,888.88	[illegible]	[illegible]	[illegible]
261	Office Furn. & Fixtures	888,881.78			888,881.78	117,088.88			117,088.88	[illegible]	[illegible]	[illegible]
262	General Shop Equipment	2,848.88			2,848.88	888.88			888.88	[illegible]	[illegible]	[illegible]
263	General Power Equipment	88,041.44			88,041.44	17,888.88			17,888.88	[illegible]	[illegible]	[illegible]
264	Gen'l. Testing & Garage Equip.	788,487.77			888,487.77	881,778.44			881,778.44	[illegible]	[illegible]	[illegible]
265	Gen'l. Tools & Implements	888,888.88	1,888.78		888,184.78	888,887.88			888,887.88	[illegible]	[illegible]	[illegible]
260	Total General Equipment	1,888,888.88	1,888.78		1,887,184.78	1,888,887.88			1,888,887.88	[illegible]	[illegible]	[illegible]
268	Interest Dur. Construction	817,888.88			817,888.88	81,478.04	8,888.78		88,888.77	[illegible]	[illegible]	[illegible]
270	Unclassified Expenditures	1,888.87			1,888.87	1,888.88	1,884.98		8,878.88	[illegible]	[illegible]	[illegible]
	TOTAL FIXED CAPITAL	[illegible]										
	TOTAL FIXED & INTANGIBLE CAPITAL	[illegible]										

[fols. 869-877] Plaintiff's Exhibits omitted in printing.

THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY OF BALTIMORE CITY

ANALYSIS OF ADDITIONS TO AND RETIREMENTS FROM FIXED CAPITAL, BY ACCOUNTS

YEAR 1933

(Under the Accounting Classification in effect prior to January 1, 1933)

Accounts		New Plant Placed	Plant Purchased	Service Wire Reused	Total Gross Additions	Plant Retired from Service	Plant Sold	Service Wire Abandoned	Total Plant Sold, Removed, or Abandoned	Net Additions	Plant Beginning of Year	Plant End of Year
200	Intangible Capital										$ 34,622.31	$ 34,622.31
207-01	Exchange Right of Way	$ 24,780.70			$ 24,780.70	$ 5,014.73			$ 5,014.73	$19,765.97	320,733.23	340,499.20
207-02	Toll Right of Way	-13,693.64			-13,693.64	2,889.91			2,889.91	-16,583.55	419,420.37	402,836.82
207	Total Right of Way	11,087.06			11,087.06	7,904.64			7,904.64	3,182.42	834,776.92	837,959.34
211	Land	4,954.67			4,954.67	2,144.14			2,144.14	2,810.53	661,629.43	664,439.96
212	Buildings	2,685.32			2,685.32	9,292.04			9,292.04	-6,606.72	2,982,043.96	2,975,437.24
210	Total Real Estate	7,639.99			7,639.99	11,436.18			11,436.18	-3,796.19	3,643,673.39	3,639,877.20
220	Central Office Equipment	28,435.09			28,435.09	71,340.28			71,340.28	-44,905.19	11,926,423.19	11,881,518.00
231	Station Apparatus	673,219.57			673,219.57	659,096.23			659,096.23	14,123.34	3,532,559.39	3,546,682.73
232	Station Installations	99,340.21	$ 57,344.53		156,684.74			$125,239.93	125,239.93	31,444.81	1,049,980.16	1,081,424.97
233	Block Wired	3,173.99	7,110.80		10,283.79			11,593.08	11,593.08	-1,309.29	92,983.85	91,674.56
234	Private Branch Exchanges	160,227.52			160,227.52	174,323.05			174,323.05	-14,095.53	1,385,926.68	1,371,831.15
235	Sprtbs & Special Fittings	49,243.57			49,243.57	72,586.06			72,586.06	-23,342.49	952,767.65	929,425.16
230	Total Station Equipment	985,205.86	64,455.33	1,049,659.19	906,005.54			136,832.96	1,042,838.32	6,820.87	7,183,661.38	7,190,482.25
241	Exchange Pole Lines	193,580.29			193,580.29	193,068.53			193,068.53	511.76	3,788,616.31	3,788,388.07
242	Exchange Aerial Cable	111,113.05			111,113.05	62,962.93			62,962.93	48,150.12	4,977,472.39	5,025,622.48
243	Exchange Aerial Wire	114,896.09	54,834.00		169,729.09	37,948.18		101,719.00	139,667.18	30,061.91	2,268,910.34	2,298,972.25
244	Exchange U. G. Conduit	18,216.54			18,216.54	9,353.29			9,353.29	8,863.25	3,092,938.89	3,101,802.13
245	Exchange U. G. Cable	114,868.41			114,868.41	70,383.86			70,383.86	44,484.55	3,830,218.07	3,874,702.62
246	Exchange Subm. Cable	-59.01			-59.01	-1,089.48			-1,089.48	1,030.47	19,280.37	20,310.84
240	Total Exchange Lines	552,554.37	54,834.00	607,388.37	592,766.86			101,719.00	474,485.86	132,902.51	20,013,435.77	20,146,338.28
251	Toll Pole Lines	25,655.24			25,655.24	54,125.47			54,125.47	-30,470.23	1,601,260.67	1,570,790.44
252	Toll Aerial Cable	32,904.43			32,904.43	960.38	$ 9,529.12		10,434.50	22,529.93	954,654.54	977,184.47
253	Toll Aerial Wire	9,431.26			9,431.26	-3,019.84			-3,019.84	12,451.10	578,963.89	591,414.99
254	Toll U. G. Conduit										140,792.48	140,792.48
255	Toll U. G. Cable	-1,269.69			-1,269.69	4,387.75	843.00		5,230.75	-6,500.44	988,990.65	982,490.21
256	Toll Subm. Cable	1,981.43			1,981.43	2,349.35			2,349.35	-367.92	37,689.06	37,321.14
250	Total Toll Lines	68,542.67			68,542.67	60,808.11	10,402.12		71,210.23	-2,767.56	4,302,351.29	4,299,583.73
260	Total General Equipment	56,746.06			56,746.06	113,060.97			113,060.97	-56,314.91	791,049.81	734,734.90
268	Interest During Construction	31.06			31.06	1,726.04	74.83		1,810.87	-1,779.81	337,436.49	335,656.68
	TOTAL FIXED CAPITAL	1,709,890.15	119,289.33	1,657,519.49	1,545,155.29	10,473.95	838,951.98	1,734,187.83				
	TOTAL FIXED & INTANGIBLE CAPITAL	$1,709,890.15	$119,289.33	$1,657,519.49	$1,545,155.29	$10,473.95						

THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY OF BALTIMORE CITY

ANALYSIS OF ADDITIONS TO AND RETIREMENTS FROM FIXED CAPITAL, BY ACCOUNTS

YEAR 1935

(Under the Accounting Classification in effect subsequent to January 1, 1935)

	Account	New Plant Placed	Plant Purchased	Service Wire Reused	Total Gross Additions	Plant Retired from Service	Plant Sold	Service Wire Abandoned	Total Plant Sold, Removed, or Abandoned	Net Additions	Plant Beginning of Year Former Classification	Plant Beginning of Year Present Classification	Plant End of Year
201	Intangible Capital										$ 28,822.31	$ (5,990.35	$ 5,990.39
278	Undistributed Cost of Property											22,861.76	22,861.76
207-01	Exchange Right of Way	$ 24,790.70			$ 24,790.70	$ 5,014.73			$ 5,014.73	$19,765.97	520,799.33	520,899.89	540,651.80
207-02	Toll Right of Way	-13,885.64			-13,885.64	2,889.91			2,889.91	-16,775.55	413,430.97	413,430.97	396,647.38
207	Total Right of Way	11,387.06			11,387.06	7,904.64			7,904.64	3,482.42	934,230.30	919,118.18	937,299.28
211	Land	4,954.67			4,954.67	2,144.14			2,144.14	2,810.53	941,623.68	941,623.68	944,335.18
212	Buildings	4,343.38			4,343.38	10,970.10			10,970.10	-6,626.72	5,088,043.84	5,088,344.88	5,081,717.80
	Total Land & Buildings	9,297.99			9,297.99	13,114.24			13,114.24	-3,816.25	5,943,484.52	5,700,968.56	5,886,052.98
221	Central Office Equipment	24,777.09			24,777.09	70,588.01			70,588.01	-45,750.92	11,908,406.19	11,895,225.65	11,879,672.77
231	Station Apparatus	644,399.57			644,399.57	629,096.23			629,096.23	7,303.34	3,892,859.88	3,730,088.82	3,937,360.21
232	Station Installations	106,180.81	$ 57,344.93		163,504.74			$125,226.95	125,226.95	38,264.81	1,049,960.16	1,191,901.89	1,230,166.80
233	Drop and Block Wire	60,230.99	61,944.80		122,175.79			113,312.06	113,312.06	8,863.74	80,996.85	1,949,772.04	1,958,636.78
234	Private Branch Exchanges	160,227.58			160,227.58	174,502.96			174,502.96	-14,275.45	1,988,206.68	1,988,280.85	1,968,005.40
235	Booths & Special Fittings	48,343.57			48,343.57	72,386.06			72,386.06	-23,342.49	888,747.95	804,801.71	881,259.22
	Total Station Equipment	1,043,381.56	119,289.33		1,181,551.19	956,185.27		238,551.96	1,144,737.23	16,813.96	7,158,260.56	8,815,249.29	8,956,777.31
241-01	Exchange Pole Lines	193,280.29			193,280.29	193,068.43			193,068.43	461.86	3,706,316.31	3,704,480.78	3,704,951.64
241-02	Toll Pole Lines	25,655.24			25,655.24	56,142.31			56,142.31	-30,487.07	1,631,369.87	1,973,418.87	1,941,931.80
242	Total Pole Lines	218,175.53			218,175.53	249,210.74			249,210.74	-31,035.21	5,337,686.18	5,677,899.65	5,646,883.44
243-11	Exchange Aerial Cable	111,113.06			111,113.06	63,126.88			63,126.88	47,986.17	4,377,472.30	4,394,598.22	4,448,218.39
243-12	Toll Aerial Cable	28,825.49			28,825.49	871.38	$ 9,611.62		10,483.00	22,342.49	954,654.54	951,067.71	973,410.20
243-21,-31	Exchange Underground Cable	114,868.41			114,868.41	70,748.50			70,748.50	44,121.91	5,909,213.07	5,256,964.66	5,300,786.51
243-22,-32	Toll Underground Cable	-1,598.69			-1,598.69	4,401.14	965.33		5,366.47	-6,965.16	889,090.65	973,220.02	885,698.86
243-41	Exchange Submarine Cable	-29.01			-29.01	-1,083.05			-1,083.05	1,054.04	19,228.97	19,268.05	20,308.09
243-42	Toll Submarine Cable	1,981.45			1,981.45	2,380.88			2,380.88	-829.45	88,169.06	88,169.10	87,339.65
243	Total Cable	255,392.58			255,392.58	140,888.65	10,576.95		151,140.58	108,230.13	11,488,948.79	11,781,707.76	11,889,956.90
245-01	Exchange Aerial Wire	57,837.09			57,837.09	57,961.97			57,961.97	19,985.12	2,309,910.54	1,329,443.97	1,389,388.49
245-02	Toll Aerial Wire	9,451.86			9,451.86	-5,021.44			-5,021.44	14,482.98	893,965.36	907,775.36	940,225.34
245	Total Aerial Wire	67,288.95			67,288.95	52,940.53			52,940.53	14,348.42	3,144,875.90	2,137,219.33	2,329,613.83
246-01	Exchange Underground Conduit	18,216.54			18,216.54	9,570.86			9,570.86	8,645.68	3,852,908.38	3,860,888.46	3,869,570.14
246-02	Toll Underground Conduit										149,865.46	150,865.46	150,865.46
246	Total Underground Conduit	18,216.54			18,216.54	9,570.86			9,570.86	8,645.68	4,002,773.84	4,011,753.92	4,020,435.60
-	Interest During Construction										327,836.89	-	-
261	Furniture & Office Equipment	10,183.87			10,183.87	29,998.64			29,998.64	-19,814.77	xx	681,089.04	681,089.04
264	Vehicle & Other Work Equipment	45,682.79			45,682.79	84,061.91			84,061.91	-37,429.12	xx	889,707.84	881,348.51
	Total General Equipment	55,866.66			55,866.66	113,060.55			113,060.55	-56,514.64	781,876.81	870,846.88	825,332.24
	TOTAL TELEPHONE PLANT	$1,708,230.15	$119,289.33	$1,827,519.48	$1,945,139.89	$10,475.05	$238,551.96	$1,794,187.88	$33,338.36	$48,931,996.37	$48,961,046.37	$50,028,979.33	

* Interest during construction distributed over related property accounts effective January 1, 1935.

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C & P. TEL. CO. OF B.C.
v. WFST et al.
U.S. DIST. CT EQ. No. 2240
Plaintiff's Exhibit A-4
Witness GRETZ
Date 9-19-37 Rec'd 320

THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY OF BALTIMORE CITY

ANALYSIS OF CHARGES AND CREDITS TO FIXED CAPITAL (DEPRECIATION) RESERVES
1924-1933

		1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
1	Balance in Reserve, January 1st	$ 6,439,796	$ 6,436,240	$ 6,636,669	$ 7,184,004	$ 7,988,716	$ 8,647,485	$ 9,471,301	$ 9,636,148	$ 9,807,348	$10,329,980
	Credits to Reserve:										
2	Charged to Expense of Depreciation and Amortization	1,448,417	1,635,506	1,800,036	1,967,815	2,105,518	2,231,797	2,358,715	2,432,249	2,541,773	2,801,923
3	Charged to Clearing Accounts	69,113	73,246	84,999	103,111	103,424	104,146	106,586	85,007	88,861	77,173
4	Total Credits to Reserve (2+3)	1,517,530	1,708,753	1,885,035	2,070,926	2,208,942	2,335,943	2,465,301	2,517,256	2,630,634	2,879,096
	Realized Depreciation:										
5	Cost of Plant Retired from Service	1,348,489	1,750,125	1,943,436	1,860,338	1,943,586	1,906,081	2,948,380	2,429,648	2,579,161	1,543,660
6	Cost of Removal	183,941	190,748	151,574	150,670	152,222	168,339	178,976	215,605	199,725	188,148
7	Extraordinary Repairs - Net	377,490	89,716	40,918	14,868	141,885	100,373	86,783	363,966	369,751	xxxx
8	Total (5+6+7)	1,909,900	2,030,581	2,135,928	2,025,876	2,237,671	2,174,774	3,148,139	3,009,220	3,128,638	1,648,908
9	Less Salvage	388,814	527,257	777,809	730,462	689,374	733,867	979,730	708,044	854,343	627,583
10	Net Realized Depreciation (8-9)	1,521,086	1,508,324	1,358,119	1,295,414	1,548,297	1,440,907	2,168,409	2,301,176	2,274,295	1,021,325
11	Net Normal Increase in Reserve (4-10)	- 3,556	200,429	526,916	796,102	658,769	814,436	172,848	229,100	342,732	1,847,850
12	Special Adjustments (Net Credit)			21,019	8,610		9,981	13,999			3,228
13	Balance in Reserve, December 31st (1+11+12)	6,436,240	6,636,669	7,184,004	7,988,716	8,647,485	9,471,301	9,636,148	9,807,348	10,329,980	11,685,058
14	Total Plant in Service and General Equipment, January 1st	27,655,962	30,856,032	34,561,862	38,447,472	41,884,816	45,136,568	46,343,694	48,075,770	49,536,858 (Dec.31, 1932	49,968,961 49,967,035)
15	Ratio of Balance in Reserve to Plant in Service and General Equipment, January 1st (13/14)	23.29%	20.86%	19.38%	18.69%	19.58%	20.09%	20.89%	20.09%	19.96%	20.48% (Dec.31, 1932 23.97%)
16	Average Plant in Service and Office Furniture and Fixtures	25,577,530	32,172,532	36,624,183	39,971,536	41,630,247	43,535,976	45,921,714	48,203,281	49,306,722	49,477,599
17	Average Plant in Service and General Equipment	29,072,034	32,731,156	36,220,468	39,568,913	42,870,358	44,136,448	46,568,718	48,975,820	49,915,844	49,884,477
18	Annual Rate for Expense of Depreciation (3÷17)	5.07%	5.00%	5.00%	5.00%	5.00%	5.13%	5.06%	5.04%	5.12%	4.42%*
19	Annual Rate for Credits to Reserve (4÷17)	5.22%	5.22%	5.20%	5.23%	5.22%	5.29%	5.34%	5.18%	5.29%	4.57%*

*The composite annual rate for Line 18, year 1933, adjusted to the depreciation schedule effective April 1, 1933, is 4.38
" " " " " Line 19, " " " " " " " " " " " " " " 4.50

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THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY OF BALTIMORE CITY

REVENUES, EXPENSES AND STATION STATISTICS - YEARS 1924 - 1932
(Under the Accounting Classification in Effect Prior to January 1, 1933)

		Year 1924	Year 1925	Year 1926	Year 1927	Year 1928	Year 1929	Year 1930	Year 1931	Year 1932
	REVENUES									
1	Exchange Service Revenue (500 to 506)	$ 7,365,354	$ 8,440,218	$ 8,949,098	$ 9,335,241	$ 9,601,731	$10,014,096	$10,382,689	$10,897,727	$10,183,274
2	Toll Service Revenues (510 to 514)	1,839,172	2,174,682	2,477,951	2,697,634	2,903,143	3,245,883	3,338,930	3,306,708	2,834,606
3	Miscellaneous Operating Revenues (520 to 526)	268,621	311,206	296,831	345,113	363,091	392,042	412,473	414,223	286,480
4	Other Telephone Revenues (310,311,313(Tel.), 316)	36,278	61,550	57,454	24,009	10,370	13,354	46,080	9,365	3,355
5	Total Telephone Revenues	$ 9,529,429	$11,037,654	$11,781,364	$12,401,997	$12,879,335	$13,665,375	$14,180,082	$14,627,113	$13,309,715
	EXPENSES									
6	Current Maintenance (601 to 607)	$ 1,580,128	$ 1,682,280	$1,744,665	$ 1,876,735	$ 1,990,943	$ 2,109,699	$ 2,229,807	$ 2,107,329	$ 1,922,854
7	Depreciation and Amortization (608, 360)	1,448,417	1,635,506	1,800,036	1,967,815	2,109,112	2,231,797	2,335,718	2,432,848	2,841,773
8	Traffic (621 to 636)	2,379,088	2,521,063	2,463,522	2,524,689	2,534,259	2,581,405	2,625,964	2,365,400	2,028,998
9	Commercial (640 to 650)	994,451	987,713	1,046,494	1,156,713	1,230,421	1,393,014	1,422,643	1,482,400	1,364,315
10	General and Miscellaneous (660 to 690)	616,797	490,586	360,874	487,016	491,986	690,327	707,214	679,[illegible]	609,984
11	License Revenue - Dr. (527)	406,320	463,357	446,647	474,587	244,614	193,572	800,843	826,680	192,092
12	Uncollectible Operating Revenue (304)	30,469	85,400	40,664	62,307	42,721	39,452	58,418	93,322	144,000
13	Taxes Assignable to Operations (305, 322, Tel.)	898,066	1,034,444	1,191,222	1,309,380	1,328,196	1,325,097	1,409,800	1,513,632	1,834,842
14	Rent Expense and Deductions (320, 330 to 334)	108,638	125,421	138,642	157,952	158,621	205,258	207,063	230,646	193,186
15	Miscellaneous Deductions From Income (321, 341)	479	-2,589	16,534	9					
16	Miscellaneous Deductions From Surplus (Net)	2,841	2,767	14,925	2,439	8,728	-8,482	759	-4,528	2,110
17	Adj. Rate Case Exp. to Amort. Allowed by Commission	-275,685	6,318	21,625	21,625					
18	Total Telephone Expenses	$ 8,188,806	$ 9,000,226	$ 9,305,880	$10,039,867	$10,134,028	$10,761,139	$11,198,224	$11,036,880	$10,535,354
19	Net Telephone Revenues	$ 1,340,621	$ 2,037,428	$ 2,475,514	$ 2,362,130	$ 2,745,307	$ 2,904,236	$ 2,981,858	$ 3,287,265	$ 2,834,776
20	Average Plant in Service	$28,458,327	$32,043,229	$35,463,078	$38,021,586	$41,494,29[illegible]	$43,276,857	$45,608,480	$47,961,456	$49,082,077
21	Net Telephone Revenues to Avg. Plant in Service	4.71%	6.36%	6.98%	6.08%	6.62%	6.71%	6.54%	6.85%	5.79%
	STATION STATISTICS									
22	Inward Station Movement	40,331	41,879	46,956	43,879	43,099	47,256	47,106	50,798	46,111
23	Outward Station Movement	30,665	35,414	36,169	38,130	36,504	37,683	36,856	45,994	58,861
24	Net Station Gain	9,666	6,465	10,787	5,749	6,595	9,573	9,250	4,804	-12,750
25	Average Stations in Service	164,579	171,479	180,710	189,423	194,065	203,398	212,564	219,811	215,489
26	Total Stations End of Period	168,870	175,335	186,122	191,871	198,426	207,998	216,248	221,309	206,189

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[fol. 882]

PLAINTIFF'S EXHIBIT A-6

C. & P. TEL. CO. OF B. C.

v.

WEST et al.

U. S. Dist. Ct. Eq. No. 2240

Witness: Greta

Date: 3-19-34. Rec. p. 351

The Chesapeake and Potomac Telephone Company of Baltimore City

Revenues, Expenses and Station Statistics—Years 1932 and 1933

(Under the Accounting Classification in Effect Since December 31, 1932)

		Year 1932	Year 1933*
	Revenues		
1	Local Service Revenues (500 to 506)	$10,174,964	$9,502,630
2	Toll Service Revenues (510 to 516)	2,750,993	2,509,669
3	Miscellaneous Revenues (521 to 526)	444,199	413,200
4	Other Telephone Revenues (313 (Tel.), 315, 316)	5,282	1,119
5	Total Telephone Revenues	$13,375,438	$12,426,618
	Expenses		
6	Current Maintenance (602 to 607, 610, 612)	$2,107,524	$2,072,210
7	Depreciation (608)	2,496,623	2,166,211
8	Traffic (621 to 635)	1,897,023	1,706,543
9	Commercial (640 to 650)	1,150,862	1,022,320
10	General Office Salaries and Expenses (661 to 665)	609,072	544,491
11	Operating Rents (671)	206,906	199,548
12	Relief and Pensions (672)	244,142	205,636
13	General Services and Licenses (674)	192,032	177,013
14	Misc. Operating Expenses (668, 669, 673, 675, 676)	43,206	56,654
15	Expenses Charged Construction—Cr. (677)	−59,585	−34,871
16	Uncollectible Operating Revenues—Dr. (530)	144,000	127,968
17	Operating Taxes (305)	1,504,842	1,624,934
18	Miscellaneous Deductions from Surplus (Net)	2,110	.....
19	Amortization of Rate Case Expense	.....	30,000
20	Total Telephone Expenses	$10,539,662	$9,898,657
21	Net Telephone Revenues	$2,836,776	$2,527,961
22	Avg. Plant in Service (1932 Accounting Classification)	$49,052,077	$49,125,000
23	Net Telephone Revenues to Average Plant in Service	5.78%	5.15%
	Station Statistics		
24	Inward Station Movement	45,111	42,438
25	Outward Station Movement	58,261	51,470
26	Net Station Gain	−13,150	−9,032
27	Average Stations in Service	215,469	201,277
28	Total Stations End of Period	206,159	199,127

* Adjusted to place Rate Case expenses on an amortization basis and to place Depreciation expense for 1933 on the basis of the rates in effect after March 31, 1933.

[fol. 883] PLAINTIFF'S EXHIBIT A-7.

C. & P. TEL. CO. OF B. C.

v.

WEST, ET. AL.

U. S. Dist. Ct. Eq. No. 2240

Witness: Gretz

Date: ——. Rec., p. —.

[fols. 884 & 885] Uniform System of Accounts

For Telephone Companies,

As Prescribed By the Interstate Commerce Commission

In Accordance With Section 20 of the Act to

Regulate Commerce

First Issue—Effective on January 1, 1913

[fol. 886] Contents

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[fol. 888] At a General Session of the Interstate Commerce Commission, held at its office in Washington, D. C., on the 10th day of December, 1912.

The subject of a Uniform System of Accounts to be prescribed for and kept by telephone companies being under consideration, the following order was entered:

It is ordered that the Uniform System of Accounts for Telephone Companies with the text pertaining thereto, embodied in printed form to be hereafter known as First Issue, a copy of which is now before this Commission, be, and the same is hereby, approved; that a copy thereof duly authenticated by the Secretary of the Commission be filed in its archives, and a second copy thereof, in like manner authenticated, in the office of the Division of Carriers' Accounts; and that each of said copies so authenticated and filed shall be deemed an original record thereof.

It is further ordered that the said Uniform System of Accounts for Telephone Companies with the text pertaining thereto, be, and the same is hereby, prescribed for the use of telephone companies having annual operating revenues exceeding $50,000, subject to the provisions of the act to regulate commerce as amended, in the keeping and recording of their accounts; that each and every such carrier and each and every receiver or operating trustee of any such carrier be required to keep all accounts in conformity therewith; and that a copy of the said First Issue be sent to each and every such carrier and to each and every receiver or operating trustee of any such carrier.

It is further ordered that any such carrier or any receiver or operating trustee of any such carrier may subdivide any primary account in the said First Issue established (as permitted in the general instructions contained [fol. 889] in the said First Issue); or may make assignment of the amount charged to any such primary account to operating divisions, to its individual lines, or to States: Provided, however, that such subprimary accounts set up or such assignments made by any such carrier or by any receiver or operating trustee of any such carrier do not impair the integrity of the accounts hereby prescribed.

It is further ordered that in order that the basis of comparison with previous years be not destroyed, any such carrier or any receiver or operating trustee of any such carrier may, during the twelve months from the time that the said First Issue becomes effective, keep and maintain, in addition to the accounts hereby prescribed, such portion or portions of its present accounts as may be deemed desirable by any such carrier, or by any receiver or operating trustee thereof, for the purpose of such comparison; or, during the same period, may maintain such groupings of

the primary accounts hereby prescribed as may be desired for that purpose.

It is further ordered that any such carrier or any receiver or operating trustee of any such carrier, in addition to the accounts hereby prescribed, may unless otherwise ordered, keep any temporary or experimental accounts the purpose of which is to develop the efficiency of operation: Provided, however, that such temporary or experimental accounts shall not impair the integrity of any primary account hereby prescribed.

It is further ordered that January 1, 1913, be, and is hereby, fixed as the date on which the said First Issue of the Uniform System of Accounts for Telephone Companies shall become effective.

By the Commission.

John H. Marble, Secretary.

[fol. 890] Introductory Letter

Interstate Commerce Commission,

Division of Carriers' Accounts

Washington, December 10, 1912.

To Telephone Companies:

This Uniform System of Accounts for Telephone Companies is issued in accordance with an order of the Interstate Commerce Commission, the text of which immediately precedes this letter. The act to regulate commerce, as amended, invests the Commission with authority to prescribe the forms of accounts to be kept by telephone companies subject to the act, and prohibits the use of any accounts other than those prescribed by the Commission. The observance of the rules and regulations stated in this system of accounts therefore becomes obligatory upon persons having direct charge of the accounts of the companies concerned, and such persons will be held responsible for their proper application.

In formulating this system of accounts it has been the endeavor of the Division of Carriers' Accounts to enlist the cooperation of the various telephone companies throughout the United States. For that purpose Accounting Series Circular No. 30, containing a tentative system

of accounts, was submitted to all telephone companies of which there was record for criticisms and suggestions, and due consideration was given to all criticisms and suggestions received.

Attention is directed to the fact that this system of accounts applies only to companies having annual operating revenues exceeding $50,000; that such companies are divided into two classes, according to their earning capacity, [fols. 891-898] and that it has been sought to provide classifications of accounts for each class, adjusted to their respective needs. No system of accounts has yet been prescribed for companies having annual operating revenues of $50,000 or less.

Accounting officers are invited to correspond with this office should question arise with regard to the correct interpretation of any account or rule herein prescribed, in order that uniformity may be secured in the application of the provisions of the classifications.

Charles A. Lutz, Chief Examiner of Accounts.

[fol. 899] Text Explanatory of Balance-Sheet Accounts

Asset Accounts

Permanent and Long-Term Investments

100. Fixed Capital Installed Prior to January 1, 1913.[1]

In this account (on the balance-sheet statement) should be shown the total of the balances in the ledger accounts representing the company's fixed capital, which was installed prior to January 1, 1913, and which is still in service at the date of the balance sheet.

101. Fixed Capital Installed Since December 31, 1912.[1]

In this account (on the balance-sheet statement) should be shown the total of the balances in the ledger accounts representing the company's fixed capital which has been

[1] The total of accounts Nos. 100 and 101 should be drawn down on the balance-sheet statement, and the total of accounts Nos. 102 and 103 deducted therefrom, the difference being shown as the net total.

installed since December 31, 1912, and which is still in service at the date of the balance sheet.

102. Reserve for Accrued Depreciation—Cr.[1]

Credit to this account such amounts as are concurrently charged to account No. 608, "Depreciation of Plant and Equipment," No. 701, "Shop Expense," No. 702, "Stable and Garage Expense," and No. 703, "Tool Expense," to cover the expense of depreciation of plant, equipment, furniture, tools and implements, as specified in the text of these accounts. This account should also be credited with any amount carried in reserve on January 1, 1913, to cover the expense of depreciation on plant, equipment, furniture, tools and implements installed prior to that date.

Charge to this account the realized depreciation of tangible fixed capital installed since December 31, 1912, when such capital is relinquished, retired, or destroyed, also the amount of depreciation carried herein in respect to tangible fixed capital installed prior to January 1, 1913, when relinquished, retired, or destroyed. (See secs. 14 and 23.)

Charge also to this account such part of the expenditures for extraordinary repairs as is concurrently credited to account No. 611, "Repairs Charged to Reserves—Cr."

[fols. 900-914] 103. Reserve for Amortization or Intangible Capital—Cr.[1]

Credit to this account such amounts as are concurrently charged to account No. 340, "Amortization of Landed Capital," and to account No. 674, "Amortization of Franchises and Patents." Charge to this account when any franchise, patent, or landed capital expires or is relinquished, the amount at which it stood charged in the company's fixed capital accounts or such portion thereof as has been previously credited to this reserve. When any intangible capital acquired prior to the raising of this reserve expires or is relinquished, that portion of its cost which has not been covered by credits to this account or previously written

[1] The total of accounts Nos. 100 and 101 should be drawn down on the balance-sheet statement, and the total of accounts Nos. 102 and 103 deducted therefrom, the difference being shown as the net total.

off should be charged to account No. 414, "Amortization Unprovided for Elsewhere."

104. Construction Work in Progress.

This account should include the amounts expended upon plant that is in process of construction under estimates or work orders, but is not ready for service at the date of the balance sheet. It includes interest charged to construction, also such proportion of plant superyision expenses, engineering expenses, tool expenses, supply expenses, and general expenses as may be properly chargeable to the construction work included under this account.

When the work is completed on any job the cost of which has been included in this account, this account should be credited with the amount at which it stands charged, and the appropriate fixed capital or other accounts should be concurrently charged, but expenditures should not be carried in this account beyond the close of the fiscal year next succeeding that in which the expenditures were made.

105. Investment Securities.

This account should include the cost or book value of stocks, bonds, and other evidence of indebtedness (including notes having dates of maturity of more than one year from date of issue) held by the accounting company, and pledged as collateral for other securities issued or assumed, or held as a means of obtaining or exercising control over other corporations, for devotion to future operations, or for securing other business advantages.

In stating this account or the subaccounts provided hereunder on the balance-sheet statement the par value of securities issued or assumed by the accounting company and carried in this account should be deducted in order that this account will show only the cost or book value of securities of other companies.

[fol. 915] Instructions Pertaining to Fixed Capital Accounts

9. Fixed capital defined.—By the fixed capital of a company (frequently termed the construction account) is meant the property, both tangible and intangible, which is devoted to the accomplishment of the principal purposes of

its business, and which has an expectation of life in service of more than one year from date of installation in service (exception being made in the case of hand-tools and other small portable tools that may be lost or stolen).

Fixed capital consists of original capital, additions, betterments, and replacements, and the cost thereof should be charged as directed below.

Original capital is the fixed capital installed or acquired prior to the beginning of regular operation by the company. As applied to a telephone company it includes the acquisition or construction of the plant necessary to begin the regular operation of an exchange or toll system. The cost of original capital should be charged to the appropriate subaccounts under account No. 100, "Fixed Capital Installed Prior to January 1, 1913," or under account No. 101, Fixed Capital Installed Since December 31, 1912."

Additions are structures, facilities, equipment, and other properties added to those in service at the beginning of operations, and not taking the place of any property of like purpose previously held by the company. The cost of additions should be charged to the appropriate subaccounts under account No. 101, "Fixed Capital Installed Since December 31, 1912."

Betterments are mechanical changes in structures, facilities, or equipment which have as their primary aim and result the making of the properties affected more useful or of greater capacity than they were at the time of their installation or acquisition. The cost of such portion only of the changes incident to betterments as will, when added to the original cost of the property bettered, give the cost of replacement or reconstruction in present condition of the property as bettered should be charged to the appropriate subaccounts under account No. 101, "Fixed Capital Installed Since December 31, 1912." The remainder of the cost of the change should be classed as a repair and be charged to the appropriate operating expense accounts.

Replacements are those installations of fixed capital which have for their purpose the substitution of one building, structure, piece of equipment, or machinery for another which it has become necessary to retire, the substitute having substantially no greater capacity than the property replaced; also the extension of life period of franchises, patents, and other intangible fixed capital.

The cost of the fixed capital retired should be credited to the fixed capital accounts in which it is carried and the cost of the fixed capital installed in place of fixed capital so retired should be charged to the appropriate subaccounts under account No. 101, "Fixed Capital Installed Since December 31, 1912."

[fol. 916] 10. Costs to be actual money costs.—All charges made to fixed capital or other property accounts with respect to any property acquired on or after January 1, 1913, should be the actual money costs of the property. When the consideration actually given for anything with respect to which a charge is made to any fixed capital or other property account is anything other than money, the actual consideration should be described in the entry with sufficient fullness and particularity to identify it, and the amount charged should be the actual money value of such consideration at the time of the transaction.

11. Interest accruing during construction period.—Account No. 268, "Interest During Construction," should include only such proportion of the interest on funds used for construction purposes and of the discount and expense on funded debt as is equitably assignable to the period between the date of the issuance of securities and the time when the property acquired or the improvement made through such issuance becomes available for the service for which it is intended. The proportion of interest, discount, and expense thus chargeable should be that which the period prior to the completion or coming into service of the facilities or improvements constructed bears to the entire life of the securities issued.

12. Costs of labor, materials, and supplies.—The term cost as used in the fixed capital (or construction) accounts means the actual cost in money of labor and materials used in construction, or the actual cost in money of property acquired after construction, or if the consideration given is other than money, the actual money value of such other consideration at the time of the purchase. Cost of labor includes not only wages, salaries, and fees paid employees, but also the personal expenses of such employees when borne by the company. Cost of material and supplies consumed in construction is the cost at the places where they

enter into construction, including cost of transportation and inspection when specifically assignable. If such materials and supplies are passed through storehouses, their cost entered in the account may include a suitable proportion of store expense.

13. Plant and equipment and other property purchased.—When any property in the form of a going or completed plant is purchased, an appraisal of the property so acquired should be made, and the different constituent elements of the plant (and equipment, if any) or other property acquired should be appraised at their structural value; that is to say, at the estimated cost of replacement or reproduction less deterioration to the then existing conditions through wear and tear, obsolescence, and inadequacy. If the actual money value of the consideration given for the plant or other property was at the time of the acquisition in excess of such appraised value, the excess should be charged to account No. 204, "Other Intangible Capital," and the appraised values of the constituent elements should be charged to the appropriate fixed capital accounts as hereinafter designated. If the actual money value of the consideration given was not in excess of such appraised [fol. 917] value, such actual money value should be distributed through the said accounts in proportion to the said appraised value of the constituent elements appropriate to the respective accounts.

Companies should be prepared to furnish the Commission, upon demand, a full report of the contract of acquisition, the consideration given therefor, the determination of the actual money value of such consideration if other than money, the appraisal, and the amounts charged to the respective accounts for each plant or other such fixed capital purchased. The purchaser is required to procure in connection with the acquisition of any such plant or other fixed capital all existing records, memoranda, and accounts in the possession or control of the grantor relating to the construction and improvement of such plant, and to preserve such records, memoranda, and accounts until authorized by law to destroy or otherwise dispose of them.

14. Fixed capital withdrawn or retired.—(a) When any tangible fixed capital acquired prior to January 1, 1913, is withdrawn or retired from service for any cause, the

amount at which it stands charged should be credited to the subaccount under account No. 100, "Fixed Capital Installed Prior to January 1, 1913," in which it is charged, and such amount, plus the expenses incident to the retirement, less the value of salvage, should be charged (1) to account No. 102, "Reserve for Accrued Depreciation—Cr." for the proportion applicable to the period covered by the reserve, and (2) to account No. 413, "Realized Depreciation not Covered by Reserves" for the remainder. Such portion only of the realized depreciation shall be charged to account No. 102, as is due to life in service during the period for which the reserve was established; this portion may be estimated on the basis of the proportion which the life in service of the property in question after that date bears to its entire life in service.

The entry of the credit to the fixed capital account should cite by name and page of book or other record the original entry of cost of the thing withdrawn. If there is no such original entry, that fact should be stated in connection with the credit entry, and the actual amount originally charged should be credited. If such amount is not known, it should be estimated, the facts upon which the estimate is based and the name of the person by whom estimated should be shown, and the amount thus estimated to be equivalent to the original charge in respect of such thing withdrawn should be credited to the fixed capital accounts involved.

(b) When any tangible fixed capital acquired subsequent to December 31, 1912, is withdrawn or retired from service for any cause the amount at which it stands charged should be credited to the fixed capital account in which it is charged, and such amount, plus the expenses incident to the retirement, less the value of salvage, should be charged to account No. 102, "Reserve for Accrued Depreciation—Cr."

[fols. 918-935] The entry of the credit to the fixed capital account should cite by name and page of book or other record the original entry of cost of the thing withdrawn.

(c) If the age of tangible fixed capital withdrawn or retired from service can not be determined for classification between account No. 100, "Fixed Capital Installed Prior to January 1, 1913," and account No. 101, "Fixed Capital Installed Since December 31, 1912," the property

so retired should be treated as having been charged to the former account, and the necessary credits should be made to the subaccounts thereunder.

(d) When any fixed capital is withdrawn or retired whose book value as carried in the fixed capital accounts has been reduced by writing off estimated depreciation, only that part of the realized depreciation which has not already been written off should be charged to account No. 102, "Reserve for Accrued Depreciation—Cr.," or to account No. 413, "Realized Depreciation not Covered by Reserves."

(e) When any fixed capital is withdrawn or retired whose book value is greater than the known or estimated cost, such excess should be charged to account No. 417, "Other Deductions from Surplus," and the realized depreciation should be charged as elsewhere directed.

(f) If any fixed capital is sold for more than its original cost, the amount of depreciation, if any, accrued and credited to a reserve in respect thereof, should be determined as accurately as possible and charged to such reserve. The sum of the amount so charged and the excess of the selling price over the cost of the property should be credited to account No. 401, "Miscellaneous Additions to Surplus."

[fols. 936-948] 340. Amortization of Landed Capital.—Charge to this account during each fiscal period such portion of the original money cost (estimated, if not known) of landed capital as carried in account No. 207, "Right of Way," and No. 211, "Land," as is necessary to cover the proportion of life thereof expired during such period.

Note A.—The amounts charged to this account should be concurrently credited to account No. 103, "Reserve for Amortization of Intangible Capital—Cr."

Note B.—When any landed capital expires or is otherwise retired from service (as e. g., through sale) the fixed capital account or investment account, if any, originally charged therewith should be credited with the amount originally charged, account No. 103, "Reserve for Amortization of Intangible Capital—Cr.," should be debited with all amounts theretofore credited to such account in respect of such capital so going out of service; the appropriate account should be debited with the proceeds of sale, if any,

and any necessary adjustment should be made through the Corporate Surplus or Deficit account.

[fol. 949] Instructions Pertaining to Operating Expense Accounts.

21. Repairs defined.—Repairs, as used in the text of the various operating expense accounts, includes ordinary and extraordinary repairs.

Ordinary repairs include:

(a) Testing for, locating, and clearing crosses, breaks, grounds, and other line troubles, including routine work intended to prevent such troubles, as, for example, pulling up slack, tightening guys and resetting guy studs, trimming trees, straightening poles and cross arms, and cleaning and adjusting apparatus;

(b) Replacements of minor or short-lived parts of structures, equipment, or facilities;

(c) Replacements of minor parts of wire plant or equipment made necessary by reason of faulty adjustments, excessive strains, mechanical injuries, or other minor casualties, not provided against in the charge for depreciation of plant and equipment;

(d) Rearrangements and changes in location of plant, except subscribers' station equipment (for which a special account is provided). This includes rearrangements of circuits, reassociation of party lines, rearranging grouping of trunks and calling circuits, recross connecting on distributing frames, rerunning jumper wires, underlining switchboard jacks, etc., together with materials used for such purposes which do not add to the tangible value of such plant;

(e) Recovering salvage and removing retired or abandoned property; (except subscribers' station equipment) when such costs are not provided for by the depreciation reserve.

Ordinary repairs are not required to be taken into account in fixing a rate of depreciation.

Extraordinary repairs include:

(a) Restoring to an efficient or proper condition buildings, structures, or other units of property which have deteriorated;

(b) Substituting, in order to maintain normal efficiency, new parts for old parts of continuous structures, such as pole lines, cables, wires, conduits, etc., where such substitutions do not amount to a practical replacement of any considerable length of such continuous structures;

(c) Restoring the condition of property damaged by storms, floods, fire, or other casualties;

(d) Recovering salvage and removing retired or abandoned property in connection with above work.

Extraordinary repairs should be provided for by adequate charges to depreciation.

When it is necessary substantially to reconstruct or to replace a major portion of any unit of property or any important section of a continuous structure, the cost should be handled through the capital accounts; that is, the cost of the property removed or replaced should be credited to the appropriate fixed capital accounts and the new property should be charged thereto.

All repairs, whether ordinary or extraordinary, should be charged to the appropriate primary operating expense accounts. Extraordinary repairs for which a reserve has been provided should then be concurrently charged to ac- [fol. 950] count No. 102, "Reserve for Accrued Depreciation—Cr.," and credited to account No. 611, "Repairs Charged to Reserves—Cr."

22. Cost of repairs.—The cost of repairs, as used in the text of the various operating expense accounts, should be understood to include the wages, salaries, and fees paid employees directly engaged in the work of repairs, personal expenses of such employees when borne by the company, and the cost of materials and supplies consumed and the expenses of facilities employed in making the repairs less the value of any salvage recovered. It includes also the cost of direct supervision, such as of foremen or superintendents of repair gangs, but does not include the cost of general supervision as provided for in account No. 601, "Supervision of Maintenance."

23. Depreciation of plant and equipment.—Telephone companies should include in operating expenses depreciation charges for the purpose of creating proper and adequate reserves to cover the expenses of depreciation bur-

rently accruing in the tangible fixed capital. By expens of depreciation is meant—

(a) The losses suffered through the current lessening in value of tangible property from wear and tear (not cov ered by current repairs).

(b) Obsolescence or inadequacy resulting from age physical change, or supersession by reason of new inven tions and discoveries, changes in popular demand, or pub lic requirements, and

(c) Losses suffered through destruction of property by extraordinary casualties.

The amount charged as expense of depreciation should be based upon rules determined by the accounting com pany. Such rules may be derived from a consideration of the company's history and experience. Companies should be prepared to furnish the Commission, upon demand, the rules and a sworn statement of the facts, expert opinions and estimates upon which they are based.

The estimates for depreciation of physical property should take into account—

(a) The gradual deterioration and ultimate retirement of units of property which may be satisfactorily individual ized, such as buildings, machines, valuable instruments, etc., to the end that by the time such units of property go out of service there shall have been accumulated a reserve equal to the original money cost of such property plus ex penses incident to retirement less the value of any salvage.

(b) The depreciation accruing in property which can not be readily individualized, such as pole lines, wires, cables, or other continuous structures, where expenditures for re pairs or replacements of individual parts ordinarily are not actually made until the later years of the life in service of such property, and when made may, therefore, be classed as extraordinary repairs.

The rate of depreciation should be fixed so as to dis tribute, as nearly as may be, evenly throughout the life of the depreciating property the burden of repairs and the cost of capital consumed in operations during a given month or year, and should be based upon the average life of the units comprised in the respective classes of property.

[fols. 951-953] The amount estimated to cover the expense of depreciation of fixed capital should be charged monthly to account No. 608, "Depreciation of Plant and Equipment" (or to the appropriate clearing account or accounts), and concurrently credited to account No. 102, "Reserve for Accrued Depreciation—Cr."

Account No. 413, "Realized Depreciation not Covered by Reserves," is provided in the Corporate Surplus or Deficit account for charges for realized depreciation on tangible fixed capital retired when such depreciation occurred prior to the establishment of account No. 102, "Reserve for Accrued Depreciation—Cr.," or has not been provided for by credits to that account.

24. Extraordinary casualties and unanticipated reconstruction.—If so authorized, upon application to the Commission, the company granted such authority may charge the amount named in the authorization to a suspense account for the purpose of distributing over a limited period an extraordinary loss of such a nature that it can not be anticipated by the exercise of reasonable prudence. Losses of this sort may be due to the requirement by lawful authority or public necessity of improvements involving the abandonment of a considerable portion of plant and equipment before it has attained its normal life in service, or to an extraordinary casualty entirely unforeseen and unprovided for. The original cost of the property so abandoned or destroyed, should be credited to the fixed capital accounts in which it was carried, and such portion of the cost as may be authorized by the Commission may be charged to the suspense account, the remainder of the cost, less any salvage, being charged out as elsewhere provided in case of retirements of property. The suspense account so raised should be credited and account No. 609, "Extraordinary Depreciation," debited monthly with such an amount as will, through its regular application, amortize the amount of the loss at the end of the period designated.

All ordinary casualties (those which occur with such frequency that the principles of insurance are applicable thereto) should be provided for through an insurance reserve maintained for such losses or be included in the provision for depreciation of plant and equipment.

25. Joint operating expenses.—When any operating expense is incurred by the accounting company for the joint

benefit of itself and others under an agreement for apportioning such expenses the company charging such expenses to others should credit such amounts to its primary expense accounts to which the expenses were charged when incurred. The debtor company should charge the amounts so billed to its primat expense accounts. Bills rendered by the operating company for joint expenses should show the expenses in detail.

The amounts so handled through the expense accounts should not include any allowance for profit or return upon the value of the property used; such allowance, if any, should be credited by the payee to the appropriate rent revenue account and charged by the payor to the appropriate rent deduction account.

[fols. 954-966] 608. Depreciation of Plant and Equipment.—Charge to this account monthly the amount estimated to be necessary to cover the depreciation accruing during the month in the company's tangible fixed capital (except depreciation provided in "Clearing Accounts," Nos. 701, 702, and 703). Amounts charged to this account should be concurrently credited to account No. 102, "Reserve for Accrued Depreciation—Cr." (See sec. 23, p. 67.)

609. Extraordinary Depreciation.—This account should be charged monthly with such an amount as will, through its regular application, amortize any amount that may be carried in suspense on account of extraordinary casualties and unanticipated reconstruction. (See sec. 24, p. 68.)

610. Other Maintenance Expenses.—This account should include cost of repairing telephone plant and equipment not provided for elsewhere.

611. Repairs Charged to Reserves—Cr.—Credit to this account and charge concurrently to account No. 102, "Reserve for Accrued Depreciation—Cr.," an amount equal to the cost of extraordinary repairs made for which provision had been made in that reserve; also, credit to this account and charge concurrently to the insurers or to the insurance reserve an amount equal to the cost of repairs made necessary by casualties, when such cost is covered by insurance or an insurance reserve. (See sec. 21, p. 66.)

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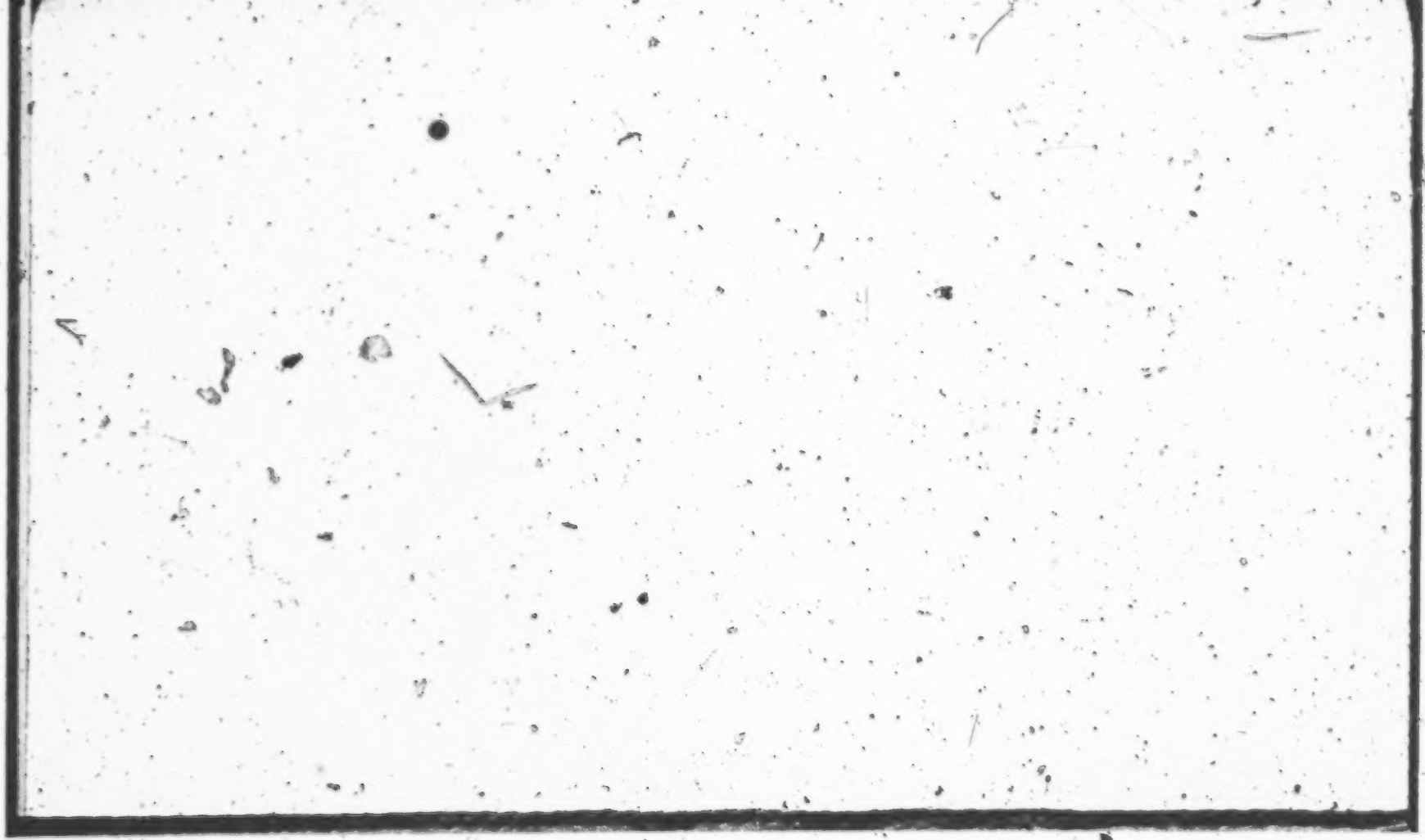

[fol. 967] PLAINTIFF'S EXHIBIT A-8
C. & P. TEL. Co. OF B. C. v. WEST et al.
U. S. Dist. Ct. Eq. No. 2240
Witness: Gretz
Date: ——. Rec. p. —

Uniform System of Accounts

for

Telephone Companies

PRESCRIBED BY THE

INTERSTATE COMMERCE COMMISSION

IN ACCORDANCE WITH SECTION 20 OF THE
INTERSTATE COMMERCE ACT

For Class A Companies
Effective on January 1, 1935

For Class B Companies
Effective on January 1, 1934

First Revised Issue

UNITED STATES
GOVERNMENT PRINTING OFFICE
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For sale by the Superintendent of Documents, Washington, D. C. - - Price 10 cents

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COMMISSION

keep such subsidiary accounts in addition to the accounts hereby prescribed, and such portion or portions of its present accounts as may be deemed desirable by any such carrier, or by any receiver or operating trustee thereof, for the purpose of such segregation and during the same period, may maintain such subsidiary accounts in addition to the primary accounts hereby prescribed as may be required for this purpose.

It is further ordered, That any such carrier or any receiver or operating trustee of any such carrier, in addition to the accounts hereby prescribed, may, unless otherwise ordered, keep any temporary or experimental accounts for the purpose of determining the efficiency of operation. Provided, however, That such temporary or experimental accounts shall not impair the integrity of any primary account hereby prescribed.

It is further ordered, That any such carrier or receiver or operating trustee of any such carrier may subdivide the accounts hereby prescribed to the extent necessary to secure the information required in the prescribed reports to commissions having jurisdiction.

It is further ordered, That the dates on which the said First Revised Issue of the Uniform System of Accounts shall become effective, be, and are hereby, fixed for Class A Telephone Companies as January 1, 1933, and for Class B Telephone Companies as January 1, 1934, provided that Class B Telephone Companies are permitted to adopt this system of accounts on January 1, 1933.

By the commission, division 4.

(Seal) George B. McGinty,
Secretary.

The provisions of the order under 14700, Depreciation Charges for Telephone Companies, have been appropriately included in this system of accounts.

The revised rules for telephone companies having average annual revenues not exceeding $50,000 will subsequently be given consideration.

This bureau will be glad to give consideration promptly to all questions arising with regard to the correct interpretation of this system of accounts which are presented to it by the officers in charge of accounts of telephone companies.

In case the carrier finds it is not in position to install upon the date specified all records necessary to comply with this system of accounts and furnishes a statement giving full facts as to its situation and the causes therefor, with a request to defer the complete installation of the accounts to a period within or at the close of the calendar year 1933, such a request to defer complete adoption of this Uniform System of Accounts will be given consideration by this Commission. The accounts contained herein as compared with those now effective are not materially so different as to prevent the returns to this Commission in the annual reports for the year 1933 being stated in accordance with these rules. Such returns will therefore be required to be in accordance with this system of accounts.

ALEXANDER WYLIE, *Director.*

INSTRUCTIONS

General

1. Classification of companies.—(A) As of the effective date of this system of accounts, for the purpose of accounting, telephone companies are divided into three classes as follows:

Class A.—Companies having average annual operating revenues exceeding $100,000.

Class B.—Companies having average annual operating revenues exceeding $50,000, but not more than $100,000.

Class C.—Companies having average annual operating revenues not exceeding $50,000.

(B) Class A companies shall keep all the accounts of this system of accounts, which are applicable to their affairs.

(C) Class B companies shall keep all the accounts of this system of accounts, which are applicable to their affairs, except that their accounts for operating revenues and expenses may be kept under the accounts of the condensed classification shown on pages 61, 64, and 65.

(D) This system of accounts is not prescribed for Class C companies.

NOTE.—In order that frequent changes may be avoided, companies operating established telephone plants may adopt the scheme of accounts indicated by the average of their annual revenues for three years immediately preceding the effective date of this order. If at the close of any calendar year the average of the annual revenues for the three latest years is greater than the amount applicable to the class in which the company has been accounting, the higher scheme of accounts shall be adopted. New companies shall estimate the amount of their annual revenues and adopt the scheme of accounts appropriate for the amount of such estimated revenues.

2. Records.—(A) The company's records shall be kept with sufficient particularity to show fully the facts pertaining to all entries in these accounts. Where the full information is not recorded in the general books the entries therein shall be supported by other records in which the full details shall be shown and the general book entries shall contain sufficient reference to the detail records to permit ready identification. The detail records shall be filed in such manner as to be readily accessible for examination by representatives of this Commission.

(B) Attention is directed to the following extract from the twentieth section of the interstate commerce act:

"Any person who shall willfully make any false entry in the accounts of any book of accounts or in any record or memoranda kept by a carrier, or who shall willfully destroy, mutilate, alter, or by any other means or device falsify the record of any such account, record, or memoranda, or who shall willfully neglect or fail

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to make full, true, and correct entries in such accounts, records, or memoranda of all facts and transactions appertaining to the carrier's business, or shall keep any other accounts, records, or memoranda than those prescribed or approved by the Commission, shall be deemed guilty of a misdemeanor, and shall be subject, upon conviction in any court of the United States of competent jurisdiction, to a fine of not less than one thousand dollars nor more than five thousand dollars or imprisonment for a term not less than one year nor more than three years, or both such fine and imprisonment: *Provided*, That the Commission may in its discretion issue orders specifying such operating, accounting, or financial papers, records, books, blanks, tickets, stubs, or documents of carriers which may, after a reasonable time, be destroyed, and prescribing the length of time such books, papers, or documents shall be preserved."

The Commission's order specifying records which may be destroyed is contained in its "Regulations to Govern the Destruction of Records."

(C) Accounts which are clearly summaries of other accounts or subaccounts provided for herein (for example, account 100, "Telephone plant," which summarizes the balances in the telephone plant accounts or account 154, "Funded debt," which summarizes the balances in the several funded-debt subaccounts) are not required to be kept in the company's books. All accounts kept shall conform in numbers and titles to those prescribed herein, except that:

(1) Companies may subdivide any of the accounts, provided such subdivisions do not impair the integrity of the accounts prescribed. The titles of all such subdivisions or subaccounts shall refer by number or title to the accounts of which they are subdivisions. When subaccounts are thus kept, it is not required that the main accounts of which they are subdivisions shall also be kept in the company's books.

(2) Clearing accounts, in addition to those prescribed herein, may be kept when necessary in making the proper distribution of items to the appropriate primary accounts.

(3) Temporary or experimental accounts may be kept in addition to the accounts prescribed herein, for the purpose of developing the efficiency of operations, etc., provided such accounts do not impair the integrity of any accounts prescribed herein.

(D) As of the effective date of this system of accounts, the several accounts prescribed herein shall be opened by transferring thereto the balances carried in the accounts previously maintained by the company. The company is authorized to make such subdivisions, reclassifications, or consolidations of such balances as are necessary to meet the requirements of this system of accounts.

2. Definitions.—When used in this system of accounts:

(A) "Accounts" or "These accounts" means the accounts of this system of accounts.

(1)

(B) "Actually issued," as applied to certificates of capital stock or evidences of funded debt issued or assumed by the company, means those which have been sold to bona fide purchasers for a valuable consideration (including those issued in exchange for other securities or other property) under the condition that the purchasers secured them free from all control by the issuing company, also securities issued as dividends on stock.

(C) "Actually outstanding," as applied to certificates of capital stock or evidences of funded debt, means those which have been actually issued and are neither retired nor held by or for the company.

(D) "Affiliated companies" means:

(1) Controlled companies, i. e., companies solely controlled by the company, and also companies jointly controlled by the company and others under a joint arrangement.

(2) Controlling companies, i. e., companies solely controlling the company, and also companies which jointly control the company under a joint arrangement.

(3) Companies controlled by controlled companies.

(4) Companies controlled by controlling companies.

(a) By "control" is meant the ability to determine the action of a company. For the purposes of this instruction the following are to be considered forms of control:

(1) Right through title to securities issued or assumed to exercise the major part of the voting power in the controlled company.

(2) Right through agreement of some character or through some source other than title to securities to name the majority of the board of directors, managers, or trustees of the controlled company.

(3) Right to foreclose a first lien upon all or a major part in value of the tangible property of the controlled company.

(4) Right to secure control in consequence of advances made for construction of tangible property of the controlled company.

(5) Right to control only in a specific respect the action of the controlled company.

(b) A leasehold interest in the property of a company is not for the purpose of these accounts to be classed as a form of control over the lessor company.

(c) Sole control is that which rests in one company.

(d) Joint control is that which rests in two or more companies and which is held under a joint arrangement.

(E) "Book cost" means the amount at which property is recorded in these accounts.

(F) "Book liability" means the amount at which securities issued or assumed by the company and other liability items are recorded in these accounts.

(G) "Company" or "The company," when not otherwise indicated in the context, means the accounting company.

(H) "Cost of removal" means the cost of dismantling, demantling, removing, tearing down, or otherwise disposing of telephone plant, including the salvage including the cost of transportation and handling incidental thereto.

(I) "Debt expense," as applied to funded debt, means all expense in connection with the sale and issue of evidences of debt, such as fees for drafting mortgages and trust deeds; fees and taxes for issuing or recording evidences of debt; cost of engraving and printing bonds, certificates of indebtedness, and other commercial paper having a life of more than one year; fees paid trustees; specific costs of obtaining governmental authority; fees for legal services; fees and commissions paid underwriters, brokers, and others for selling or exchanging evidences of debt; fees and expense of listing on exchanges, and other like costs.

(J) "Depreciation," as applied to depreciable telephone plant, means the loss in service value (note instruction 3-F) not restored by current maintenance, incurred in connection with the consumption or prospective retirement of telephone plant in the course of service from causes which are known to be in current operation, against which the company is not protected by insurance, and the effect of which can be forecast with a reasonable approach to accuracy.

(K) "Discount," as applied to securities issued or assumed by the company, means the excess of the par or face value of the securities plus interest or dividends accrued at the date of the sale over the current money value of the consideration received at their sale.

(L) "Group plan," as applied to depreciation accounting, means the plan under which depreciation charges are accrued upon the basis of the book cost of all property included in such depreciable account, using the average service life thereof property weighted, and upon the retirement of any depreciable property in full service value is charged to the depreciation reserve whether or not the particular item has attained the average service life.

(M) "Investment advances" means advances represented by notes or by book accounts only, with respect to which it is mutually agreed or intended between the creditor and the debtor that they shall be settled by the issuance of capital stock or funded debt or shall not be subject to current cash settlement.

(N) "Minor items," as applied to depreciable telephone plant, means any part or detail which is not designated as a unit of property in Appendix A.

(O) "Miscellaneous physical property" means all physical property owned by the company other than telephone plant.

(P) "Net salvage value" means the salvage value (note instruction 3-F) of the property retired after deducting the cost of removal.

(Q) "Reasonably issued," as applied to certificates of capital stock or evidences of funded debt, means those which have been

until the acquisition of the securities to which it relates, at which time (except under provisions of instruction 10) the proportion thereof based on the relation of the amount of stock reacquired to the total amount outstanding before the reacquisition) of the balance in the discount and premium accounts for the particular class of stock reacquired shall be closed to account 405, "Miscellaneous credits to surplus," or to account 415, "Miscellaneous debits to surplus," as may be appropriate.

(F) No discount on capital stock shall be included in any account as a part of the cost of acquiring any property, or as a part of the cost of operations.

(G) If the net of the balances in the discount and premium accounts for all classes of capital stock outstanding is a debit balance, the amount shall be included in the balance sheet statement in account 134, "Discount on capital stock," and if a credit balance the amount shall be included in account 151, "Premium on capital stock."

15. Discount, premium, and expense on funded debt.—(A) A separate discount, premium, and debt expense account shall be maintained to include both discounts suffered and premiums realized, together with expenses incurred, at the sale or resale of each particular class of funded debt issued or assumed by the company. (Note instruction 6-I-K-D.)

(B) The company may extinguish at any time through charges to account 412, "Miscellaneous debits to surplus," all or any part of the debit balance remaining in any particular discount, premium, and debt expense account.

(C) Each month or other accounting period there shall be credited to each particular discount, premium, and debt expense account in which there is a debit balance the proportion (based upon the ratio of the period to the life of the security outstanding at the beginning of each such accounting period) of such debit balance as is applicable to the period. The amounts thus credited shall be concurrently charged to account 532, "Amortization of discount on funded debt." (See also instruction 22-D-10-k.)

(D) Correspondingly each month or other accounting period there shall be charged to each particular discount, premium, and debt expense account in which there is a credit balance the proportion of such credit balance as is applicable to the period. The amounts thus charged shall be concurrently credited to account 250, "Reserve of premium on funded debt." (See also instruction 22-D-10-k.)

(E) Except as provided in paragraphs (B), (C), and (D) of this instruction, the balances in each of these accounts shall be carried until the reacquirement of the securities to which it relates, at which time (except under provisions of instruction 10) the proportion thereof based on the relation of the amount of funded debt reacquired to the total outstanding before the reacquirement of the [illegible] proportion of the estimated current cost

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new, of the plant includable in each of these accounts as the estimated remaining service life of the respective classes of plant includable therein bears to the average over-all service life of the same class of plant installed by the accounting company.

(B) To account 280, "Construction work in progress," the cost of any uncompleted projects acquired.

(C) The estimated amount of the reserve requirements applicable to the plant shall be credited to accounts 171, "Depreciation reserve," and 172, "Amortization reserve."

(D) The difference between the net of the amounts includable in these accounts as provided in the foregoing paragraphs B and C and the cost to the accounting company of the plant purchased shall be debited or credited as appropriate to account 278, "Undistributed cost of property," except that when any difference thus chargeable to account 278 applies to duplicate or other telephone plant which will be retired by the purchaser in the reconstruction of the purchased property and its consolidation with previously owned property, the accounting for the amount applicable to such plant shall be presented to this Commission for consideration and approval.

(E) Upon application by the company, in each instance, to this Commission and subject to its approval, the company may charge to its telephone plant accounts and may also credit to its depreciation and amortization reserve accounts the amounts carried in those accounts by the vendor company with respect to the property purchased.

(F) Journal entries recording the purchase of a complete telephone system, a complete exchange or a complete toll system, shall be presented to this Commission for consideration and approval. The text of such entries shall give a complete description of the property purchased and the bases upon which the amounts of the entries have been determined.

22. Cost of construction.—(A) The cost of the construction of property chargeable to the telephone plant accounts shall include the cost of labor, material and supplies, transportation, contract work, protection, injuries and damages, privileges and permits, taxes, rent, interest during construction, insurance, and other analogous elements in connection with such work. (See also instruction 20-B.)

(B) The following is a description of the major items referred to in the foregoing paragraph:

(1) "Cost of labor" includes the pay and expenses of employees directly engaged in or being trained for construction work, of foremen in direct charge thereof, and an equitable proportion of the cost of local plant administration, general plant supervision and engineering, and of the pay, office, and other expenses of general officers and general office employees devoting part of their time to supervisory, administrative, or clerical functions in connection with construction work.

(2) "Cost of material and supplies" includes the purchase price at the point of free delivery plus the costs of inspection, loading and transportation, and an equitable proportion of supply expense. In determining the cost of material used, proper allowance shall be made for unused material, for material recovered from temporary structures used in performing the work involved, and for discounts allowed and realized in the purchase of material.

(3) "Cost of transportation" includes the cost of transporting employees, material and supplies, tools, and other work equipment. It includes amounts paid therefor to other companies or individuals and the cost of the company's own motor vehicle or other transportation service.

(4) "Cost of contract work" includes amounts paid for work performed under contract by other companies, firms, or individuals, engineering and supervision applicable to such work, costs incident to the award of contracts and the inspection of such work.

(5) "Cost of protection" includes the cost of protecting the company's property from fire or other casualties and the cost of preventing damages to others or the property of others.

(6) "Cost of injuries and damages" includes expenditures or losses in connection with construction work on account of injuries to persons (other than payments to or on behalf of employees made under a company's general provision for employees' benefits—see account 672) and on account of damages to the property of others. (See also account 669.)

(7) "Cost of privileges and permits" includes payments for and expenses incurred in securing privileges, permits, or rights in connection with construction work, such as for use of private property, streets, or highways. The cost of such privileges and permits shall be included in the cost of the work for which the privileges or permits are secured, except for costs includable in account 202, "Franchises," and account 207, "Right of way."

(8) "Taxes" includes taxes on physical property during construction and before the facilities are completed ready for service. This includes taxes on land held under a definite plan for its use in telephone service for the period prior to the completion of telephone facilities thereon and other taxes assessed on property during construction separately from taxes on operating property or assessed under conditions which permit separate identification or allocation of the amount chargeable to construction.

(9) "Rent" includes payments for the use of facilities, such as motor vehicles, special tools or machines, and quarters used in construction work.

(10) "Interest during construction" includes the amount of interest upon all moneys, including the company's own funds, used in the acquisition or construction of telephone property and shall

be charged to the accounts appropriate for the cost of the property acquired or constructed as follows:

(a) Reasonable amounts for interest during the construction period (before the property is received or is completed ready for telephone service) on general funds expended for the acquisition or construction of telephone plant shall be charged to the telephone plant accounts and credited to account 313, "Interest income."

(b) When funds, derived from the sale of bonds, notes, and other interest-bearing debt, are specifically acquired and separately held for use in the construction of telephone plant, the total interest, discount or premium, and expense on such debt applicable to the accounting period shall be included in the cost of telephone plant and credited to account 313, "Interest income."

(c) During a period of suspension of a construction project no interest charge for a longer period than one year from the date of its suspension shall be included in these accounts unless specifically authorized by this Commission. No such interest charges shall be included in these accounts on expenditures for construction projects which have been definitely abandoned.

(11) "Insurance" includes premiums paid or amounts credited to account 169 for the protection against loss and damages in connection with the construction of telephone plant due to fire or other casualty, injury to or death of employees or others, damages to property of others, defalcation of employees and agents, and the nonperformance of contractual obligations of others. (See also account 668.)

23. Improvements to leased telephone plant.—(A) Except as provided in paragraph (B) following, the cost of initial improvements (including repairs, rearrangements, additions, and betterments) to telephone plant leased from others made in the course of preparing the property for service and the cost of any subsequent additions and betterments of the leased telephone plant shall be charged to the telephone plant account appropriate for the class of property leased, unless the leasing arrangements provide that specific improvements shall be made to the leased property by the lessee and that such improvements shall revert to the lessor and constitute a part of the consideration paid for the use of the property. In the latter case, the cost of the improvements reverting to the lessor which represents payments for the use of the lessor's property shall be charged to account 129, "Prepaid rents," and cleared over the period of the lease to the appropriate rent expense or clearing accounts.

(B) When the improvements to leased telephone plant otherwise chargeable to the telephone plant accounts are of relatively minor cost or short life or the period of the lease is less than one year, the cost shall be charged to the account chargeable with the cost of repairs of such plant.

(C) When the cost of improvements to leased telephone plant is included in the telephone plant accounts, charges for depreciation thereof shall be made on such basis as will amortize the service value of such improvements during the period of their expected use.

24. Units of property.—The "units of property" (see also instruction 25–A–1) established at the date of issuance of this system of accounts are listed in Appendix A. Additions to or revisions of this list will be issued, when necessary, by this Commission, to which any applications for such additions or revisions shall be presented by the company.

25. Telephone plant retired.—(A) Depreciable telephone plant: For the purpose of avoiding undue refinement in accounting for the replacement of small items of property, the accounting for retirements and replacements of depreciable telephone plant, as grouped below, shall be as follows:

(1) *Units of property.*—This group includes major items of property, a list of which is shown in Appendix A. The book cost of any such item retired shall be credited to the plant account and charged to account 171, "Depreciation reserve," whether or not replaced. (See also par. (B) of the text of account 171.) The cost of property installed in place of the property retired shall be charged to the appropriate telephone plant account.

(2) *Minor items.*—This group includes any part or element which is not designated as a unit of property. The book cost of any minor item of property retired and not replaced shall be credited to the plant account and charged to account 171 (see also par. (B) of the text of that account), except that if the book cost of a minor item of property is accounted for through the retirement of units of property, no separate credit to the telephone plant account is required when such an item is retired. Except as provided in note under account 231, "Station apparatus," in Appendix A, if minor items of property are retired and replaced (apart from the unit of property of which they form a part or with which they are associated) no adjustment shall be made in account 171. The cost of the replacement shall be charged to the account appropriate for the cost of repairs of the property, except that if the replacement effects a substantial betterment (the primary aim of which is to make the property affected more useful, of greater durability or of greater capacity) the excess cost of the replacement over the estimated cost at current prices of replacing without betterment the minor items retired shall be charged to the appropriate telephone plant account.

(B) Station installations, drop and block wires: When stations are removed from customers' premises the book cost of the station installations carried in account 232, "Station installations," and of any drop and block wires carried in account 233, "Drop and block wires," thereby retired from service shall be credited to the plant

accounts and charged to account 607, "Station removals and changes." The latter account shall be credited with the salvage value (note instruction 8-W) of such property recovered. The cost of the removal of the station apparatus, inside, drop and block wires shall be charged to account 607.

(C) Land: The book cost of land retired shall be credited to account 211, "Land." If the land is sold, the difference between such book cost and the sale price (less commissions and other expenses of making the sale) of the land shall be credited to account 401, "Credits for telephone plant sold," or debited to account 410, "Debits for telephone plant sold," as may be appropriate. If the land is retained by the company and held other than for immediate sale, the book cost shall be charged to account 103, "Miscellaneous physical property." The accounting for leaseholds retired shall be as provided for in the texts of account 172, "Amortization reserve," and account 671, "Operating rents."

(D) Determination of book costs: The book cost of telephone plant retired shall be the amount at which such property is included in the telephone plant accounts when such amount can be determined from the company's records. Ordinarily, such records shall be used in the retirement of land, buildings, complete central offices, furniture and other items of plant for which individual cost records are maintained. When the actual book cost can not be determined from the records, it shall be estimated. When it is impracticable to determine the book cost of each item due to the relatively large number or small cost of such items, the average book cost of all the items shall be used in determining the book cost of the items retired. The latter method may be applied in retirement of such items as telephones, bell boxes, station installations, poles, cross arms, wire, cable, cable terminals, conduit, and non-multiple private branch exchange switchboards.

(E) The accounting for the retirement of Organization, Franchises, Patent rights and Undistributed cost of property, shall be as provided in the texts of account 172, "Amortization reserve," account 413, "Miscellaneous debits to surplus," account 673, "Telephone franchise requirements," and account 675, "Other expenses."

(F) When telephone plant is sold together with the telephone traffic associated therewith, the book cost of the property shall be credited to the appropriate plant accounts and the estimated amounts carried with respect thereto in the depreciation and amortization reserve accounts shall be charged to such reserve accounts. The difference, if any, between (a) the net amount of such debit and credit items and (b) the consideration received (less commissions and other expenses of making the sale) for the property shall be included, if a debit, in account 410, "Debits for telephone plant sold," and if a credit, in account 401, "Credits for telephone plant sold." The accounting for depreciable telephone

plant sold without the traffic associated therewith shall be in accordance with the accounting provided in paragraph (B), of account 171, "Depreciation reserve."

INCOME ACCOUNTS

30. Purpose of income accounts.—The income accounts (300 to 344, inclusive) are designed to show as nearly as practicable for each calendar year, the total operating revenues and operating expenses of the company; the returns accrued upon securities owned and from property not used in the company's operations; the amounts accrued for taxes, use of moneys, and use of operating properties of others; and reservations and appropriations of income. (See also instructions 4, 5, and 6.)

31. Income from sinking and other funds.—When interest and other income arising from funds carried in account 104, "Sinking funds," account 136, "Provident funds," or account 137, "Insurance and other funds," (see also account 314) are required by the mortgage or other provisions to be held in the funds, they shall be charged to those accounts. If such funds are represented by a reserve established through reservations of income or surplus, amounts so set aside shall be charged to account 342, "Contractual reservations of income," account 343, "Miscellaneous reservations of income," account 414, "Contractual reservations of surplus," or account 415, "Miscellaneous reservations of surplus," and credited to account 169, "Insurance reserve," account 170, "Provident reserve," or account 180, "Surplus reserved," as may be appropriate.

SURPLUS ACCOUNTS

40. Purpose of surplus accounts.—The surplus accounts (400 to 416, inclusive) are designed to show the changes in the company's surplus or deficit during each calendar year resulting from (a) the operations and other transactions during that period reflected in the income accounts, (b) appropriations or other reservations of surplus for specific purposes, (c) accounting adjustments not properly attributable to the period (see also instruction 5) and (d) miscellaneous losses and gains not provided for elsewhere. The balance of the surplus accounts (400 to 415, inclusive) shall be closed into account 181, "Unappropriated surplus," at the end of each calendar year.

OPERATING REVENUE ACCOUNTS

50. Purpose of operating revenue accounts.—(A) The operating revenue accounts (500 to 530, inclusive) are designed to show the amounts of money which the company becomes lawfully entitled to receive from the furnishing of telephone service (including operations incidental thereto). Credits to the various revenue accounts shall be based upon the actual amounts chargeable for service rendered by the company. It is not required that

ing, moving, and reporting on the outboard property, and the cost of determining the need for repairs, replacements, rearrangements, changes, testing for, locating and clearing trouble, and the like, for B) to prevent trouble, such as painting and cleaning lightning rods and lightning arresters, trimming trees and cutting brush on poles and cross arms and burning and otherwise disposing of the trimmings, replacing defective guys and anchors and resetting them, straightening poles, rearranging and changing the location of property not retired, repairing defective buildings not constituting additions to property, repairing material for reuse, restoring the condition of property damaged by storms, floods, fire, or other casualties not due to C), training employees for maintenance work, inspecting and testing. Idle repairs have been added, and an equitable proportion of the cost of local plant administrative, general plant supervision and engineering.

(B) The cost of repairs does not include the cost of replacing items of property designated as "units of property" except as provided in instruction 23, "Repairs of minor equipment," for labor and incidental costs in the replacement of minor apparatus. (See also instruction 25.)

23. Joint operating expenses.—(A) In determining the operating expenses incurred under arrangements for joint participation or apportionment between telephone companies, the accounting company shall charge initially the entire expense to the appropriate primary accounts. The proportion of such expenses borne by the latter shall be credited by the creditor and charged by the debtor to the accounts initially charged, except that by agreement between the participating companies the proportion of traffic expenses borne by the latter may be credited by the creditor to account 532, "Joint traffic expenses—Cr." and charged by the debtor to account 534, "Joint traffic expenses—Dr."

(B) Any allowances for rents on the property used under the arrangement shall be credited by the creditor to the appropriate rent expense account and charged by the debtor to the appropriate rent expense account.

(C) The creditor company shall inform the debtor company of the methods of charges made by it.

24. Classification of pay and expenses of employees.—(A) Charges to the operating plant, operating expense and other accounts for services and expenses of employees engaged in operating telephone properties shall be based upon the actual time employed at the regular or class of work, except that the pay and expenses of an employee who performs two or more kinds of work during the day may be distributed upon the basis of a majority of the time employed during a representative period. (See instruction 25.)

(B) The pay and expenses of employees of the operating and purchasing departments shall be charged to the accounts in which the employees are regularly employed.

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BALANCE SHEET ACCOUNTS

(Note particularly instructions 10 to 17, inclusive)

I. Investments

100. **Telephone plant.**—This account shall include the company's investment in property used or held under a definite plan for telephone service (note instruction 3–AA) at the date of the balance sheet as classified under accounts 201 to 280, inclusive. (See also instructions 2–C, 20 and 21.)

101. **Investments in affiliated companies.**—(A) This account shall include the book cost (see also instruction 12) of the company's investment in securities issued or assumed by affiliated companies (note instruction 3–D) other than securities held in special funds (see also note C to this account) or as temporary cash investments, and also its investment advances (note instruction 3–M) to such companies.

(B) This account shall be maintained to show separately the book cost of:

(1) Stocks.
(2) Funded debt.
(3) Investment advances.

(C) The company's records shall be kept in such manner that in the annual report to this Commission the securities pledged as collateral security for any of the company's funded debt or short-term loans or to secure performance of contracts may be shown separately from securities unpledged.

Note A.—Accounts receivable from affiliated companies which are subject to current settlement shall be included in account 128.

Note B.—The value of securities borrowed by the company shall not be included in this account.

Note C.—The book cost of securities held in special funds shall be included in accounts 124, 126, or 127, as may be appropriate.

Note D.—Working funds advanced to affiliated companies other than investment advances (note instruction 3–M) shall be included in account 115.

102. **Other investments.**—(A) This account shall include the book cost (see also instruction 12) of the company's investment in securities issued or assumed by nonaffiliated companies (note instruction 3–S) and individuals, other than securities held in special funds (see also note C to this account) or as temporary cash investments; also its investment advances (note instruction 3–M) to such parties and special deposits of cash for more than one year from date of deposit.

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(B) This account shall be maintained to show separately the book cost of:

(1) Stocks.

(2) Funded debt.

(3) Investment advances.

(4) Special deposits of cash for more than one year from date of deposit.

(C) The company's records shall be kept in such manner that in the annual report to this Commission the securities pledged as collateral security for any of the company's funded debt or short-term loans or to secure the performance of contracts may be shown separately from the securities unpledged.

NOTE A.—Amounts receivable from nonaffiliated companies and individuals which are subject to current settlement shall be included in account 130.

NOTE B.—The value of securities borrowed by the company shall not be included in this account.

NOTE C.—The book cost of securities held in special funds shall be included in accounts 124, 126, or 127, as may be appropriate.

NOTE D.—Working funds advanced to nonaffiliated companies and individuals other than investment advances (note Instruction 3-M) shall be included in account 115.

103. Miscellaneous physical property.—This account shall include the company's investment in physical property other than telephone plant (the investment in which is includable in account 100). It shall include the cost of land when acquired other than that for which there is a definite plan for its use in telephone service and buildings and other improvements upon such land; also the cost of land retired from telephone service and held other than for immediate sale, and buildings and other improvements upon such land. It shall include also the company's investment in property, such as lighting, water, power, and manufacturing plants, not held incident to the company's telephone operations, and assessments against miscellaneous physical property for the construction of public improvements.

NOTE.—The cost of land or buildings retired from telephone service and held for immediate sale shall be carried in account 311 or 313, respectively.

104. Sinking funds.—(A) This account shall include the amount of cash, the book cost of securities issued by other companies and of nominally issued and nominally outstanding (note instruction 3-Q-R) securities issued or assumed by the company, and other assets which are held by trustees or by the company's treasurer in a distinct fund, for the purpose of redeeming outstanding obligations. (See also instructions 12, 13, and 31.)

(B) A separate account shall be kept for each sinking fund under a title which shall designate the obligation in support of which the fund was created.

105. Company securities owned.—(A) This account shall include the book cost of nominally issued and nominally outstanding (note instruction 3-Q-R) securities issued or assumed by the

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company, other than such securities held in sinking or other special funds. (See also instruction 13.)

(B) This account shall be maintained to show:

(1) For stock—

(a) Par stock.

(1) Number of shares and total par value of shares unpledged.

(2) Number of shares and total par value of shares pledged.

(b) Nonpar stock—

(1) Number of shares and any nominal value assigned to shares unpledged.

(2) Number of shares and any nominal value assigned to shares pledged.

(2) For funded debt—

(a) Total par value unpledged.

(b) Total par value pledged.

II. Current Assets

113. Cash.—This account shall include the amount of current funds available for use on demand in the hands of financial officers and agents, or deposited in banks or with trust companies, also funds in transit for which agents have received credit. (See also instruction 11.)

NOTE.—Working funds shall be included in account 115.

114. Special cash deposits.—This account shall include the amount of cash on special deposit, other than in sinking and other special funds provided for elsewhere, to pay dividends, interest, and other debts, when such payments are due one year or less from the date of deposit; the amount of cash deposited to insure the performance of contracts to be performed within one year from date of the deposit; and other cash deposits of a special nature not provided for elsewhere. This account shall include the amount of cash deposited with trustees to be held until mortgaged property sold, destroyed, or otherwise disposed of is replaced, and also cash realized from the sale of the company's securities and deposited with trustees to be held until invested in physical property of the company or for disbursement when the purposes for which the securities were sold are accomplished. (See also instruction 11.)

NOTE A.—Cash on deposit in special accounts where the funds are available for the current requirements of the company shall be included in account 113.

NOTE B.—This account shall not include any amounts representing securities owned.

NOTE C.—Cash on special deposit to be held for more than one year from the date of deposit shall be included in account 123.

115. Working funds.—This account shall include amounts advanced to officers, employees, and others as working funds from which certain expenditures are to be made and accounted for. (See also instruction 11.)

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116. Temporary cash investments.—This account shall include the book cost of securities acquired for the purpose of temporarily investing cash, such as time drafts receivable and time loans, bankers' acceptances, United States Treasury certificates, marketable securities, and other similar investments of a temporary character. (See also instructions 11, 12, and 13.).

117. Notes receivable.—This account shall include the book cost not includable elsewhere, of all collectible obligations in the form of notes receivable and other similar evidences (except interest coupons) of money receivable on demand or within a time not exceeding one year from date of issue. (See also instruction 11.)

NOTE.—Obligations any part of which matures more than one year from date of issue, obligations maturing serially any part of which matures more than one year from date of issue, and notes evidencing investment advances (note instruction 3-M) are includable in accounts 162, 163, 164, 165, 166 or 167.

118. Due from customers and agents.—This account shall be subdivided as follows:

(A) Due from customers and agents.

(1) This subaccount shall include amounts due from customers for services rendered or billed and from agents and collectors authorized to make collections from customers (see also instruction 11). This subaccount shall be kept in such manner as will enable the companies to make the following analysis:

(a) Amounts due from customers who are still receiving telephone service.

(b) Amounts due from customers whose telephone service has been discontinued and whose accounts are in process of collection.

(2) Collections in excess of amounts charged to this subaccount may be credited to and carried in this account until applied against charges for services rendered or until refunded.

(3) The amount of notes held as security for customers' accounts may be carried in this account pending collection.

(B) Reserve for uncollectible accounts—Cr.

(1) This subaccount shall be credited with such amounts as may be charged to account 530, "Uncollectible operating revenues—Dr.," to provide for uncollectible accounts included in subaccount 118-A. (See also instruction 51.) There shall also be credited to this subaccount amounts collected which previously have been written off through charges to this subaccount and credits to subaccounts 118-A.

(2) If this reserve for uncollectible accounts is maintained, to it shall be charged any amounts covered thereby which have been found to be impracticable of collection. If such reserve is not maintained, amounts included in subaccount 118-A which have been found to be uncollectible shall be charged to account 530, "Uncollectible operating revenues—Dr."

120. Accounts receivable.—(A) This account shall include amounts currently due from others and not provided for in other

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accounts, such as those for traffic settlements, material and supplies, repairs to telephone plant, matured rents, and interest receivable under monthly settlements on short-term loans, advances and open accounts. (See also instruction 11.)

(B) In the balance sheet statement there may be included in this account the net amount receivable from companies against each of which there is a net debit balance between this account and account 159, "Accounts payable."

121. **Interest and dividends receivable.**—This account shall include the amount of interest accrued to the date of the balance sheet on bonds, notes and other commercial paper owned, on loans made and the amount of dividends receivable on stocks owned. (See also instruction 11.)

NOTE A.—These accounts (note instruction 3-A) shall not include dividends or other returns on securities issued or assumed by the company and held by or for it, whether pledged as collateral, or held in its treasury, in special deposits or in sinking and other funds.

NOTE B.—Interest receivable under monthly settlements on short-term loans, advances, and open accounts, shall be included in account 120.

122. **Material and supplies.**—(A) This account shall include the cost of unapplied material and supplies held in stock, including plant supplies, tools, fuel, stationery, directory paper stock, and other supplies, and articles in process of manufacture for supply stock.

(B) Transportation charges, so far as practicable, shall be included as a part of the cost of the particular material to which they relate. When not so includable, they shall be charged to account 704, "Supply expense."

(C) So far as practicable, cash and other discounts on material shall be deducted in determining the cost of the particular material to which they relate or credited to the account to which the material is charged. When not so deductible, they shall be charged to account 704, "Supply expense."

(D) Material recovered in connection with construction, maintenance, or the retirement of property shall be charged to this account as follows (note instruction 3-W):

(1) Reusable material consisting of large individual items such as central office and multiple branch exchange switchboards shall be included in this account on the basis of book cost, estimated if not known. The cost of repairing such items shall be charged to the appropriate account in operating expenses.

(2) Reusable material consisting of relatively small items such as those the identity and original cost of which can not be maintained (from date of original installation in plant to the final abandonment or sale thereof) without excessive cost of handling and undue refinement in accounting shall be included in this account upon the basis of current prices new for such items. The cost of repairing such items shall be charged to the appropriate account in operating expenses.

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(3) Scrap and nonusable material included in this account shall be carried at the estimated amount which will be received therefor. The difference between the amounts realized for scrap and nonusable material sold and the amounts at which it is carried in this account, so far as practicable shall be adjusted in the accounts credited when the material was taken up in this account.

NOTE A.—Interest paid on material bills the payments of which are delayed shall be charged to account 532.

NOTE B.—Inventories of material and supplies shall be taken during each calendar year and the necessary adjustment to bring this account into harmony with the actual inventory shall be made. In effecting this adjustment, differences which may practicably be assigned to important classes of material shall be equitably adjusted among the accounts to which the classes of material are ordinarily chargeable. Other differences shall be equitably apportioned among the primary accounts in which material has been charged since the last inventory or included in account 704. The company is permitted to equalize over the period between inventories, through debits or credits to account 704 and concurrent credits or debits to account 123, the estimated amount, based on the company's past experience, of the overage or shortage which will occur at the subsequent inventory. Determined differences between the amount of the provision thus made and the actual inventory overage or shortage shall be cleared as provided for in the second and third sentences of this note.

NOTE C.—If, for convenience in accounting and economy in handling material and supplies for nontelephone operations, their cost is included in this account, the company's records shall be so maintained that the cost of such material and supplies so carried can be determined.

123. Other current assets.—This account shall include the amount of all current assets which are not includable in accounts 113 to 122, inclusive, such as unmatured rents receivable. (See also instruction 11.)

III. Deferred Debits

129. Prepaid rents.—This account shall include the amounts of rents paid in advance, except minor amounts which may be charged direct to the final accounts. As the term expires for which the rents are paid, this account shall be credited at monthly intervals and the appropriate account charged. (See also instructions 22–B–9, 23–A and accounts 203, 315, 671 and the clearing accounts.)

130. Prepaid taxes.—This account shall include the amounts of taxes paid in advance, except minor amounts which may be charged direct to the final accounts. As the term expires for which the taxes are paid, this account shall be credited at monthly intervals and the appropriate account charged. (See also instruction 22–B–8 and accounts 305 and 322.)

131. Prepaid insurance.—This account shall include the amount of insurance premiums paid in advance, except premiums chargeable to the telephone plant accounts and minor amounts which may be charged direct to the final accounts. As the term expires for which the premiums are paid, this account shall be credited at monthly intervals and the appropriate account charged.

132. Prepaid directory expenses.—This account shall include the cost of preparing, printing, binding, and delivering directories and the cost of soliciting advertisements for directories, except

for each "premium paid on [illegible] ownership in the property retired or of the reserve requirements of regulating or other authority applicable to operating companies, and the period over which, in the judgment, the amounts of such charges should be distributed.

150. Other deferred debits.—This account shall include all deferred debits, other than those provided for in accounts 130 to 148, inclusive, such as unamortized [illegible] debit balances in a separate item can not be cleared and disposed of until additional information is received; debit balances in clearing accounts; the amount pending determination of loss, of funds on deposit with banks which have failed; assets of current character but of doubtful value (see also instruction 11); revenue coupons and income items held in suspense (see also instruction 8); amounts paid for options pending final disposition; the cost of preliminary surveys, plans, investigations, etc., made for determining the feasibility of projects under contemplation. This account shall include also the cost of valuations, inventories, and appraisals taken in connection with the contemplated purchase or sale of property. If the property is subsequently purchased, the preliminary costs shall be charged to the appropriate telephone plant or other [illegible] or if it is sold, such costs shall be deducted from the sale price in accounting for the property sold; if other contemplated projects are carried out, the preliminary costs shall be included in the cost of the projects; if the contemplated projects are abandoned, such costs (including options paid; if any) shall be charged to account 213, "Miscellaneous debits to surplus."

IV. Stock

160. Capital stock.—(A) This account shall include the book liability for certificates which represent permanent interests in the company or interests which if terminable are so only at the option of the company, as follows:

(1) For actually outstanding stock. (Note instruction 3-C).

(a) The par value of par stock.

(b) The current money value at time of sale of the consideration received for nonpar stock. [See also notes A and B to this account.]

(c) Appropriations of surplus which have been transferred to nonpar stock account.

(2) For nominally issued and nominally outstanding stocks. (Note instructions 3-Q-R and 13-B.)

(a) The par value of par stock.

(b) Any nominal value assigned to nonpar stock.

(B) This account shall be kept so as to show the book liability for stocks [illegible] according to preferences in distribution of dividends or assets, differences in voting rights, and differences in conditions under which they may be retired.

(C) To this account shall be charged at the time of retirement the book liability for all stock retired.

[illegible]

Note A.—Does a special tax or assessment to create sinking funds of any kind constitute the payment of any sum in addition to the outstanding capital stock of the company, the payment of which is guaranteed, upon which dividends shall be required to be paid, or guaranteed interest to be paid, in the statement of the capital stock? If so, the sum of such tax or assessment is to be added to the book liability carried in this account for such stock.

Note B.—[illegible] shall be made in this account for common stock issued for the [illegible] of the bonds of the [illegible] of shareholders in proceedings [illegible] shall be made in the account for such [illegible] unless the authorities have been properly authorized and [illegible].

151. Stock liability for conversion.—This account shall include the company's liability under agreements to exchange its capital stock for the outstanding securities of other companies which have not been presented for exchange. [illegible] When any or all of such securities surrendered for exchange have been given all rights and privileges of capital stock of the company's own issue, such securities shall be included in account 150.

152. Premium on capital stock.—This account shall include the net balance, if a credit, in the discount and premium accounts for all classes of capital stock. (See also Instruction 14–G.)

153. Capital stock instalments.—(A) This account shall include amounts received on account of subscriptions to capital stock prior to the issuance of the [illegible].

(B) As the total amount of each subscription is received and stock certificates are issued this account shall be cleared; the book liability for the certificates shall be included in account 150, "Capital stock," and any discount or premium involved shall be included in the appropriate discount and premium account.

(C) There shall be shown under this account in the short column of the balance sheet, the total amount of the capital stock subscriptions which have not been fully paid or canceled and also the total amount unpaid on such subscriptions.

V. Long-Term Debt

154. Funded debt.—(A) This account shall include the total face value of unmatured debt, maturing more than one year from date of issue, issued by the company and not retired and the total face value of similar unmatured debt of other companies, the payment of which has been assumed by the company, including funded debt the maturity of which has been extended by specific agreement. (See also Instructions 13 and 15.)

(B) This account shall be kept so as to show the face value of: (1) Nominally issued funded debt, (2) actually outstanding funded debt, and (3) nominally outstanding funded debt. (Note Instructions 8–C–G–K.)

(C) The amounts included herein shall be further divided so as to show the amount of each class of funded debt as follows:

(1) Mortgage bonds.—Bonds secured by lien on physical property and not convertible in the other subdivisions of this account.

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(2) *Collateral trust bonds.*—Bonds which are secured by a lien on securities or other negotiable paper, and stock trust certificates that are similar in character to collateral trust bonds.

(3) *Income bonds.*—Bonds which are a lien on a company's revenue alone, or bonds which, while being a lien on the property and franchises, can claim payment of interest only in case interest is earned.

(4) *Miscellaneous obligations.*—All funded obligations not provided for by the other subdivisions of this account, including unsecured certificates of indebtedness, debenture bonds, plain bonds, and other similar obligations maturing more than one year after date of issue.

(5) *Receipts outstanding for funded debt.*—Amounts received on account of subscriptions to funded debt, except that amounts received in excess of the total face value of any kind of funded debt under subscription shall be accounted for as a premium and included in the appropriate discount, premium, and debt expense account. (See also instruction 18.) As the total amount of such subscription is received and evidences of indebtedness are issued, this subaccount shall be cleared, the face value of the funded debt shall be included in the proper subdivision of this account and any discount or premium involved shall be included in the appropriate discount and premium account.

(D) Each of the above classes shall also be divided into subclasses according to differences in mortgage or other lien or security therefor, rate of interest, interest dates, or date of maturity.

NOTE A.—Amounts maturing one year or less from date of issue shall be included in account 151, except that where an issue of securities maturing serially over a period of more than one year contains such maturities, such maturities shall be included as funded debt.

NOTE B.—Matured funded debt shall be included in account 768.

NOTE C.—Investment advances, including those represented by notes (note instruction 3-M), shall be included in account 154 or account 157, as may be appropriate.

155. *Receivers' certificates.*—When any receiver acting under the orders of a court is in possession of the property of the company and under the orders of such court issues evidences of indebtedness chargeable upon such property, the face value of such evidences of indebtedness shall be credited to this account.

156. *Advances from affiliated companies.*—This account shall include the amount of investment advances (note instruction 3-M) from affiliated companies (note instruction 3-D).

NOTE.—Amounts due affiliated companies, which are subject to current settlement, shall be included in account 135 or other appropriate account.

157. *Other long-term debt.*—This account shall include investment advances (note instruction 3-M) from nonaffiliated companies (note instruction 3-N) or individuals, and other long-term debt not provided for elsewhere.

NOTE.—Amounts due nonaffiliated companies or individuals which are subject to current settlement shall be included in account 135 or other appropriate account.

[illegible]

[illegible]

[illegible]

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170. Provident reserve.—(A) This account shall include specific appropriations of income or surplus and the amounts contributed by employees or others (whether carried in special trust funds or in the general funds of the company) for pensions, accident and death benefits, savings, relief, hospital and other provident purposes, when administered by trustees or managers acting for the company.

(B) This account shall include also the amount accrued for pensions through charges to account 672, "Relief and pensions." Amounts so credited shall, when actually paid to retired employees or paid into a trust fund irrevocably devoted to the payment of pensions, be charged hereto.

171. Depreciation reserve.—(A) This account shall be credited with amounts concurrently charged to account 608, "Depreciation," and account 702, "Vehicle and other work equipment expense," for currently accruing depreciation (note instruction 3-J) of telephone plant (see also instructions 20, 21, and 22). It shall also be credited with any amounts which the company may elect to charge to account 413, "Miscellaneous debits to surplus," and transfer to this account in respect of past accrued depreciation not provided for. (See also instructions 20-C and 21.)

(B) At the time of retirement of depreciable telephone plant, this account shall be charged with the book cost of the property retired plus the cost of removal (except the cost of removal of station apparatus) and shall be credited with the salvage value and insurance recovered, if any. It shall be credited with amounts chargeable to account 138, "Extraordinary maintenance suspense," as provided in instruction 23. (See also instruction 25.)

(C) For corporate ledger and balance sheet purposes this account shall be regarded and treated as a single composite reserve. However, for purposes of analysis, each company shall maintain subsidiary records in which the depreciation reserve is broken down into component parts corresponding to the primary telephone plant accounts which include depreciable telephone plant (see also instruction 22); these subsidiary records shall show the current credits and debits to the reserve in complete detail by such primary plant accounts.

172. Amortization reserve.—(A) This account shall be credited with amounts concurrently charged to account 671, "Operating rents," account 673, "Telephone franchise requirements," and account 675, "Other expenses," for the amortization of leaseholds, franchises, and patents, respectively. (See also instruction 23-E.)

(B) This account shall also be credited with any amounts concurrently charged to account 413, "Miscellaneous debits to surplus," to provide a reserve for the retirement of amounts carried in account 301, "Organization," and account 378, "Undistributed cost of property." (See also note to this account.)

(C) When any leasehold carried in account 211, "Land," or any franchise or patent expires, is relinquished or otherwise retired from

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service, this account shall be charged with the amount previously credited hereto in respect of the property going out of service. The book cost of the property so retired less the amount chargeable to this account and less the proceeds realized at retirement shall be included in the appropriate surplus account. (See accounts 715 and 174 for depreciation on miscellaneous physical property.)

(D) When amounts carried in account 201, "Organization," or account 278, "Undistributed cost of property," are retired, this account shall be charged with any amount previously credited hereto in respect of the property retired.

NOTE.—It is not required that a reserve be maintained for the retirement of amounts carried in accounts 201 and 278.

173. Employment stabilization reserve.—(A) This account shall be credited with amounts concurrently charged to account 611, "Employment stabilization." When maintenance work for which provision has been made in this account is performed, this account shall be charged with an amount equal to the cost of such work and concurrently account 611 shall be credited.

(B) This account shall also be credited with amounts concurrently charged to account 672, "Relief and pensions," under provisions of paragraph (F) of that account to provide a reserve for termination allowances or similar benefits to employees of the company when such employees are laid off because of lack of work, also to provide necessary and warranted relief to former employees. When disbursements are made for these purposes they shall be charged to this account.

174. Other deferred credits.—(A) This account shall include the amount of all deferred credits not includable in accounts 168 to 173, inclusive, such as credit balances in clearing accounts; estimated uninsured casualty liabilities charged to account 669, "Accidents and damages"; amounts awaiting adjustments between accounts; amounts accrued for depreciation of miscellaneous physical property; and revenue, expense, and income items in suspense. (See also instruction 6.)

(B) When miscellaneous physical property not previously used in telephone service is disposed of, this account shall be charged with the amount previously credited hereto in respect of such property and the book cost of the property so retired less the amount chargeable to this account and less the value of the salvage recovered or the proceeds from the sale of the property shall be included in the appropriate surplus account. In case the property had been used in telephone service previous to its inclusion in account 103, "Miscellaneous physical property," the amount accrued for depreciation thereon after its retirement from telephone service shall be charged to this account and credited to account 171, "Depreciation reserve," and the accounting for its retirement from account 103 shall be in accordance with that applicable to telephone plant retired. (See also instruction 25.)

IX. Donations for Telephone Plant

175. Donations.—This account, in accordance with instruction 20–C, shall include the amounts of money or its equivalent donated for the construction or acquisition of telephone property. The amount of such donation shall be permanently carried in this account.

X. Surplus

180. Surplus reserved.—This account shall include all amounts, not provided for elsewhere, reserved from surplus including those reserved by charges to income and surplus, such as appropriations of income or surplus to sinking and other fund reserves and reservations charged to income or surplus in respect of operating revenues subject to possible refund under rate litigations.

181. Unappropriated surplus.—(A) An account under this title shall be maintained in the general books of the company. The balance of all surplus primary accounts (400 to 416, inclusive) shall be closed into this account at the end of each calendar year. (See also instruction 40.)

(B) If the balance in this account is a deficit, it shall be shown in red in the balance sheet of the report to this Commission.

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TELEPHONE PLANT ACCOUNTS

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PLANT ACCOUNTS

(Note particularly instructions 20 to 25, inclusive)

201. **Organization.**—This account shall include the cost of organizing and incorporating the company, and the expense of issuing capital stock. (See also instructions 14 and 15.)

ITEMS

[Note instruction 8]

Amounts paid for legal services.
Amounts paid for privileges of incorporation.
Fees and commissions paid, including cash value of securities issued, to promoters, underwriters, brokers, and salesmen.
Fees and taxes for issuance of capital stock.
Listing capital stock on exchanges.
Office expenses incident to organizing and preparing the company for operation.
Preparing, engraving, printing, issuing, and distributing prospectuses and certificates in connection with original and additional stock issues.
Revenue stamps on new issues of capital stock.
Soliciting subscriptions for stock, including fees, commissions, and advertising.
Special counsel and other fees and expenses in mergers, consolidations, and reorganizations.

NOTE A.—Whenever all or any portion of an issue of capital stock is retired, the proportionate part of the amounts included in this account for expenses incurred in connection with such issue shall be retired.

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Note B.—When charges are made to this account for expenses incurred in mergers, consolidations, or reorganizations, amounts previously included herein on the books of the various companies concerned should not be carried over unless it is clear that such items involve no duplication when added to the new charges made or to be made.

202. Franchises.—This account shall include the cost of governmental franchises and similar rights running for more than one year which are necessary in the conduct of the company's telephone operations. It shall include amounts paid in cash and the cost of plant, material, supplies, and equipment given as the initial consideration for such franchises; cost of advertising, governmental election costs assumed by the company, and similar expenses incurred in procuring such franchises; also the original cost of franchises acquired by assignment. This account shall include amounts, other than those includable in account 201, "Organization," paid to municipalities or other governmental agencies as a condition precedent to engaging in business, whether or not the right to occupy city property, streets, and highways is obtained in connection therewith. (See also instruction 23-B-7.)

Note A.—The cost of franchises running for one year or less after acquisition shall be charged to account 671, or, if such franchises extend beyond the current year, to account 123. Franchises acquired at small cost may be charged to account 672 irrespective of their term of life.

Note B.—Franchise taxes (payable annually or more frequently) shall be charged to account 532.

Note C.—This account shall not include the cost of plant, material and supplies, or equipment furnished to municipalities or other governmental authorities when given other than as initial consideration for franchises or similar rights. (See also account 671.)

203. Patent rights.—This account shall include the cost of patent rights having a life of more than one year from date of acquisition for use in connection with the company's telephone operations.

Note.—The cost of patents having a life of one year or less, patents acquired of small cost or in an undeveloped state, patents of doubtful service value, and similar expenditures on account of patents shall be charged to account 672.

207. Right of way.—This account shall include the cost of land, and of leaseholds, easements, and similar rights in land, having a term of more than one year, acquired for the location of pole line, cable, wire, and conduit plant, also the cost of permits to erect poles and to place conduit when the expected period of occupancy under such permits exceeds the estimated life of the initial plant installed. It shall include the related portion of the pay and expenses of right-of-way agents and other costs of acquiring such land, rights, and permits.

Note A.—The cost of permits to erect poles and to place conduit when the expected period of occupancy under such permits does not exceed the estimated life of the initial plant installed, also the cost of other permits not includable in this account, such as those to place cable and wire on bridges and fences, and the related pay and expenses of engineers and other costs incident to acquiring such permits shall be included in the account appropriate for the cost of the property constructed. (See also instruction 23-B-6.)

Note B.—Annual or other frequent payments for the use of right of way shall be charged to account 671.

Note C.—Payments to municipalities or other governmental agencies (exclusive of franchise taxes) as consideration for a franchise or right to conduct the company's tele-

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phone operations, whether or not the right to occupy city property, streets, and highways is obtained thereunder, shall be accounted for as franchise payments. (See also accounts 322 and 323.)

211. Land.—(A) This account shall include the cost of land and of leaseholds, easements, and similar rights in land having a term of more than one year held for general and central office buildings, garages, shops, and for storage and other telephone purposes other than right of way, including the cost of land for which there is a definite plan for its use in telephone service but only after the completion of telephone facilities thereon. It shall include special assessments upon lands for the construction of public improvements. (See also instruction 25-C.)

(B) When land, together with buildings thereon, is acquired the cost shall be fairly apportioned between the land and the buildings and accounted for accordingly. If the plan of acquisition contemplates the removal of the buildings, the total cost of the land and buildings shall be accounted for as the cost of the land, and the salvage value of the buildings when disposed of shall be deducted from the cost of the land so determined. (See also note E to this account.)

ITEMS

[Note instruction 6]

Assessments for the construction of public improvements. (See also note D to this account.)
Clearing or defending title against claims relating to period prior to purchase.
Commissions and fees to brokers, agents, and others.
Condemnation proceedings, including court costs and special counsel fees.
Conveyancer and notarial fees.
Examination and registration of titles.
Grading of land got in connection with buildings.
Relocating property of others in acquisition of land.
Sidewalks on public streets abutting company's property.
Taxes assumed, accrued prior to date of acquisition.
Taxes on land during the period of construction. (See also instruction 25-D-4.)
Voiding leases to secure possession of land acquired.

NOTE A.—Annual or more frequent payments for the use of land shall be charged to the account appropriate for rents.

NOTE B.—When land is acquired for which there is not a definite plan for its use in telephone service, its cost shall be charged to account 103.

NOTE C.—When land is acquired in excess of that required for telephone purposes, the cost of such excess land shall be included in account 103.

NOTE D.—Installments of assessments for public improvements, including interest, if any, which are deferred without option to the company shall be included in this account only as they become due and payable. Interest on assessments which are not paid when due shall be included in account 426.

NOTE E.—In case land is purchased for immediate use in a construction project, its cost shall be included in account 240, until such time as the project involved is completed and ready for service.

212. Buildings.—(A) This account shall include the cost of buildings, and the cost of all permanent fixtures, machinery, appurtenances, and appliances installed as a part thereof. It shall include costs incident to the construction or purchase of a building and to securing possession and title.

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(B) When land together with the buildings thereon is acquired and there is a definite plan for their use in telephone service, the purchase price shall be fairly apportioned between the land and buildings, and the amount applicable to the buildings shall be included in this account; the amount applicable to the land shall be included in account 212. (See also account 211.)

Items.

[Also instruction 8.]

Awnings.
Boilers, furnaces, fixtures, and machinery for heating, lighting, ventilating, and plumbing.
Cable vaults and conduits constructed as part of the building.
Commissions and fees to brokers, agents, architects, and others.
Door checks and door stops.
Drainage and sewerage systems.
Electric wiring.
Elevators.
Fencing and hedges.
Fire-extinguisher systems.
Garages, sheds, and stables.
General and central office buildings.
Grading, excavating, and preparing grounds for buildings, including laying out of grounds after construction.
Improvements to leased buildings. (See also instruction 22.)
Linoleum and similar floor covering, excluding carpets and rugs.
Motors and generators.
Partitions, including movable.
Piers and foundations for machinery constructed as a permanent part of a building.
Platforms, storage or loading.
Power boards.
Refrigeration systems.
Retaining walls.
Screens, door and window.
Shelf.
Sidewalks, pavements, and driveways on building grounds.
Sprinkling systems.
Storm doors and windows.
Voting taxes to secure possession of buildings acquired.
Water, steam, and gas pipes.
Water-supply systems.
Window shades and ventilators.

NOTE A.—This account shall not include the cost of any telephone equipment or wiring or apparatus for generating or controlling electricity for operation of the telephone system.

NOTE B.—The cost of [illegible] shall be included in account 241.

231. Central office equipment.—(A) This account shall include the cost of electrical instruments, apparatus, and equipment, other than station equipment, in central offices (including terminal and test rooms), repeater stations and test stations, used in transmitting traffic and operating signals, and similar equipment in operators' cabinets and other centralized locations.

(B) This account shall also include the cost of operators' chairs, wire chiefs' tools, desks and tables equipped with central office telephone equipment, and other furniture, fixtures, and equipment designed specifically for use in central offices, repeater stations,

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etc., or installed as a part of the electrical equipment herein. (See also note A to this account.)

Items

[Note instruction B]

Aisle-lighting equipment.
Balconies for distributing frames.
Banks-connector, selector.
Batteries.
Battery cabinets.
Boards-floor alarm, power, test, service observing.
Building alterations, minor, such as opening and closing holes in ceilings, partitions, walls, and floors to permit installation of equipment, power conduits, and wiring.
Cables. (See also note B to this account.)
Calculagraphs.
Call registers.
Carrier-current equipment.
Carrier line filters.
Circuit breakers.
Covers for transmission power apparatus.
Desks and tables when equipped with central office telephone equipment. (See also note A to this account.)
Engines, including special foundations not a part of buildings.
Frames-alarm, combiner, decoder, cross-bar connector, line finder, line switch, repeater, selector, sender, test.
Fuse boards.
Fuse panels.
Generators, including special foundations not a part of buildings.
[illegible] wires.
[illegible]udicator equipment.
Line filters.
Loading coils. (See also note C to this account.)
Loudspeaker equipment.
Main and intermediate frames.
Meters.
Motors, including special foundations not a part of buildings.
Multiples apparatus.
Operators' breast plate transmitters.
Operators' chairs.
Operators' head sets.
Platforms, not part of buildings.
Pole changers.
Power circuits for emergency use including payment for installation by others of circuits not owned.
Power plants.
Power panels.
Protectors.
Pulse machines and time machines.
Radio transmitting and receiving equipment.
Rectifiers.
Relay racks and cut racks.
Relays.
Repeater cabinets.
Repeater sets.
Rheostats.
Ringing machines, including special foundations not a part of buildings.
Service observing and other observing equipment and [illegible] equipment.

Switchboards—cabinet type "A" and "B" manual, toll, dial system.
Switches—connector, line repeater, selector, repeater test, distributor.
Terminals.
Telegraph instruments and equipment.
Telephotographic equipment.
Teletypewriter switchboards and equipment.
Test boards.
Testing and reuniting central office equipment prior to assignment to service.
Test tables.
Testing equipment and tools, central office. (See also note D to this account.)
Ticket holders.
Toll circuit carriers.
Turrets.
Wire mills for battery service.

NOTE A.—The cost of desks and tables not equipped with central-office equipment, and of kitchen and dining-room equipment, chairs of the same types as used in other offices, typewriters, portable electric fans, etc., shall be charged to account 391.

NOTE B.—The cost of cables leading from the main frame to outside plant shall be charged to account 362.

NOTE C.—The cost of loading coils on circuits leading from the main frame to outside plant shall be included in the account charged with the cost of the circuit of which they are a part.

NOTE D.—The cost of portable testing equipment and tools other than those regularly used in central offices shall be charged to account 396.

231. Station apparatus.—This account shall include the cost of station apparatus, installed either for customers' or the company's use, excluding the cost of installation and inside wires.

Items
[Note instructions 3]

Backboards.
Battertel, station.
Battery boxes.
Bell boxes.
Coin collectors.
Cords.
Desk sets, hand sets, and wall sets, including those used at main, extension, private-branch-exchange, and private-line stations, etc. This includes such sets used as operators' sets at private branch exchanges, order turrets and order tables, and those used in central offices and operators' schools. (See also note A to this account.)
Dials.
Extension bells.
Field set assemblies.
Induction coils.
Monitors, and similar signaling devices.
Printer-telegraph equipment.
Program-supply equipment.
Public-address equipment.
Receivers.
Signal sets.
Station switching and signaling devices, including apparatus enclosed, keys, key cabinets, and devices used with intercommunicating systems.
Telegraph equipment.
Telephotographic equipment.
Transmitters.

NOTE A.—Operators' hand sets and transmitters in central offices and at private branch exchanges and toll, dial, and order boards for which keysets and others, shall be included in accounts 231, 234, and 235, as appropriate.

NOTE B.—The cost of station protectors is includible in account 232.

232. Station installations.—(A) This account shall include the cost of installing station apparatus and the cost of inside wires. Inside wires include:

(1) The wires (or small cables) from the station apparatus to the point near the entrance to the building where the drop or block wire or cable terminates, or to the junction boxes where the house cable or other cable terminates.

(2) The wires (or small cables) used to connect station apparatus in the same building, such as main stations with extension stations, and stations of intercommunicating systems.

(3) The wires (or small cables) used to connect private-branch-exchange switchboards or their distributing frames with terminal stations located in the same building.

(B) This account shall include the cost of clamps, cleats, connecting blocks, ground wires, ground rods, nails, station protectors, screws, and other material used in the installation of station apparatus and inside wires.

NOTE A.—Costs chargeable to this account in connection with cables are restricted to small cables used in station installations instead of wires, such as those run from wall outlets or floor terminals to the station apparatus. The cost of other inside cables, including riser and distributing cables in buildings, which by their physical character, method of installation, and permanence of fittings hence cables is chargeable to account 242.

NOTE B.—The cost of inside wires (or small cables) installed specifically to serve as trunk, battery, or generator circuits from a private branch exchange to the point of connection with the permanent house or outside cables or wires shall be charged to account 234.

233. Drop and block wires.—(A) This account shall include the cost of drop and block wires or service connections, i. e., the portion of a customer's circuit (whether aerial or underground) extending from the inside wire (usually at the station protector or connecting block) or from the station equipment when no inside wire is involved, to the point of connection with the general overhead or underground system. This includes such circuit, carried by means of wire or small cables, extending to the cable terminal in cases where connection is made with a general cable system, or to the point of connection with the aerial wire plant in cases where connection is made with a general wire system. The company shall exercise such precautions as are necessary to prevent credits to this account for aerial wire removed.

(B) This account shall include the cost of brackets, bridle rings, insulators, knobs, span clamps, screws, sleeves, strand, tubes, and other material used in the installation of drop and block wires; the cost of trimming trees and other costs incurred in the installation of such wires; the cost of pipes or other protective covering for underground service connections, and the cost of permits and privileges for construction.

234. Private branch exchanges.—This account shall include the cost of private-branch-exchange equipment installed either for customers' or the company's use.

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ITEMS

(Note instruction 8)

Attendants' cabinets or cordless switchboards.
Cable or wires from distributing frame to switchboard.
Code call units.
Code sending sets.
Dial system branch exchanges.
Distributing frames.
Inside wires (or small cables used instead of wires) installed specifically to serve as trunk, generator, or battery circuits from a private branch exchange to the point of connection with the permanent house or outside cables or wires.
Operators' chairs.
Operators' head sets and breastplate transmitters.
Order receiving tables.
Order turrets.
Power equipment, including special foundations.
Protectors.
Switchboards.

NOTE A.—The cost of riser and distributing cables in buildings other than central offices, which by their physical characteristics, method of installation, and permanence constitute regular house cable shall be charged to account 242.

NOTE B.—The cost of poles, wires, and cables, whether or not on private property, used to connect the private branch exchange with its terminal stations shall be charged to the pole, wire, and cable accounts.

NOTE C.—The cost of cross connection boxes installed as a part of the house cable system, including those used as the distributing frames for private branch exchanges, shall be charged to account 242.

235. **Booths and special fittings.**—This account shall include the cost of telephone booths and special fittings (exclusive of station apparatus) such as attendants' desks (including equipment or switchboards) counters, railings, chairs, fans, cash registers, directory tables, stands or shelves, and public telephone signs.

241. **Pole lines.**—This account shall include the cost of poles, cross arms, guys, and other material used in the construction of pole lines.

ITEMS

(Note instruction 8)

Anchors.
A and H fixtures.
Bolts.
Braces, pole and back.
Bridge fixtures.
Cable arms.
Clearing routes and tree trimming except maintenance of previous clearings. (See also account 602.)
Crossarms.
Extension arms.
Guard arms.
Guy clamps.
Guy guards.
Guy wire or strand.
Painting, treating, reaming, roofing, sawing, and stenciling poles.
Permits and privileges for construction. (See also account 267 and instruction 12-B-7.)
Pins.
Pole headlocks, spacers.
Poles.

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Pole steps.
River crossing and long span fixtures.
Strain insulators.
Towers.

242. Cable.—This account shall include the cost of aerial, underground, and submarine cable. It shall include the cost of cable extending from the central office main frame to the point of connection with aerial wire or with drop or block wires or service connections, inside wire or private branch exchange cable, and the cost of interoffice (including intercity) cable; also the cost of cable terminals or boxes, loading coils, and other material used in the construction of the cable plant.

ITEMS

[Note instruction 4]

Bonds and grounds.
Cable—block, feeder, main, subsidiary.
Cable—aerial, buried, submarine, underground.
Cable—house, including riser and distributing cable extending to floor terminal boxes, cross-connection boxes at wall outlets, etc., where connection is made with inside wires.
Cable clamps.
Cable rings.
Cable terminals or boxes.
Cross-connection wires and fuses installed in the first equipment for service of cable terminals or boxes.
Electrolysis surveys made in the course of installing cable.
Floor terminal boxes and cross-connection boxes at wall outlets.
Fuse boxes.
Loading coils, building-out condensers, carrier-line filters and cases therefor.
Main frame terminating cable extending to outside cable.
Negative returns.
Permits and privileges for construction. (See also account 207.)
Pedestals.
Pole seats and balconies.
Pressure contactor terminals.
Protective covering for buried cable, i. e., cable not run in regular conduit, such as fiber or other material (except when constructed so as to be reusable in place for other cable) and the cost of manholes, etc., designed specifically for use in such construction.
Protectors and arresters.
Pumping out and cleaning manholes and ducts in cable construction work. (See also note A to this account.)
Safety straps.
Sleeves.
Splicing boxes.
Strand, suspension.
Submarine cable terminal huts.
Tree guards.
Trenching for and burying cable not run in regular conduit.
Trolley guards.

NOTE A.—The cost of pumping water out of manholes and of cleaning manholes and ducts in connection with the maintenance or operation of plant shall be charged to account 502.

NOTE B.—The cost of small cables used in station installations instead of wires, such as those run from wall outlets or floor terminals to the station apparatus shall be charged to account 232. The cost of small cables used as drop wire shall be included in account 233.

NOTE C.—The cost of cable leading from a metal office main frames to other central office equipment shall be charged to account 231.

NOTE D.—The company's records shall be so maintained that the value of wire in cables may be shown in the annual reports to this Commission.

243. Aerial Wire.—This account shall include the cost of aerial wire other than drop and block wires, including insulators, tie wires, and other material used in the construction of aerial wire plant. The company shall exercise such precautions as are necessary to prevent credits to this account for drop and block wires removed.

ITEMS

[Note instruction 6]

Bridle rings.
Bridle wire.
Ground wire, clamps, and rods.
Insulators and thimbles.
Loading coils, building-out condensers, carrier line filters, and cases therefor.
Permits and privileges for construction. (See also account 207.)
Protectors and arresters.
Repeating coils.
Tie wires.
Transposition brackets.
Transposition of circuits in initial construction work and any additions or betterments resulting from transposing or retransposing existing circuits.

NOTE.—The cost of drop and block wires shall be included in account 233.

244. Underground Conduit.—This account shall include the cost of tile, pipe, and other conduit, whether underground, in tunnels or on bridges, and of manholes, handholes, and service boxes, including cable racks and other furnishings thereof, and the cost of riser pipe. It shall include the cost of opening trench and repaving in the construction of such plant and the cost of permits and privileges for construction. (See also account 207.)

NOTE A.—The cost of protective covering for buried cable, i. e., cable not run in regular conduit, such as fiber or other material (except when constructed so as to be reusable in place for other cable) and the cost of trenching, manholes, etc., designed specifically for use in such construction shall be charged to account 242.

NOTE B.—The cost of pipes or other protective covering for underground drop and block wire or service connections shall be included in account 233.

261. Furniture and Office Equipment.—This account shall include the cost, not provided for in other accounts, of furniture and equipment in offices, storerooms, shops, and other quarters. (See also accounts 221, 234, and 235 and instruction 20-E.)

ITEMS

[Note instruction 6]

Beds, cots, and couches.
Bins, cabinets, and shelves.
Bookcases.
Cabinets and filing cases.

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1301

Cages, cashiers'.
Carpets and rugs.
Chairs.
Clocks.
Davenports.
Desks.
Equipment in rest, dining, recreation, and medical rooms.
Fans, electric, portable.
Fire extinguisher equipment, portable.
Floor scrubbing and polishing machines.
Gas and electric fixtures, portable.
Lockers and wardrobes, portable.
Mirrors, portable.
Motion picture equipment.
Office devices, including addressing, billing, blue printing, computing, dating, du[illegible]ng, mailing, photostat and recording machines, cash registers, check writers, postage meter machines, typewriters, etc.
Pianos and phonographs.
Radio sets.
Racks—magazine, newspaper, umbrella, and clothing.
Refrigerators, portable.
Safes.
Sewing machines.
Stoves.
Switchboards, special type public demonstration.
Tables.
Vacuum sweepers.
Vending machines.
Water coolers.

NOTE.—The cost of fixtures attached to and constituting a part of buildings shall be charged to account 213.

264. **Vehicles and other work equipment.**—This account shall include the cost of vehicles, tools, garage and shop machinery and equipment, and miscellaneous work equipment not provided for in other accounts. (See also instruction 20–E.)

Items

[Note instruction 6]

Air compressors.
Automobiles, motor trucks and tractors, including those equipped with earth-boring machines, pumps, winches, etc.
Blowers, power.
Carts, cable splicer.
Camp wagons, cars, and mounted kitchens.
Compressed air tools.
Concrete mixers and breakers.
Derricks.
Draft animals.
Drills and hammers, power.
Earth-boring machines.
Forges.
Gasoline and oil pumps, portable.
Hand tools.
Hand trucks.
Harness.
Ladders.
Lighters, power.
Motorcycles and bicycles.
Motorcycles and tricycles.

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Motors and generators.
Planers.
Pole treating apparatus, chemical.
Pumps.
Tamping and back filling machines.
Tents, cable splicers.
Testing equipment, portable. (See also note B to this account.)
Torches.
Trucks.
Trenching machines.
Wagons.
Winches, power.
Wire measuring machine.

NOTE A.—The cost of chairs, desks, tables, etc., in garages and shops shall be charged to account 231.

NOTE B.—The cost of testing equipment and tools regularly used in central offices shall be charged to account 221.

276. **Telephone plant purchased.**—This account may be charged temporarily with the cost of telephone plant purchased pending distribution to the primary telephone plant accounts. (See also instruction 21.)

NOTE A.—The cost of telephone plant purchased may be distributed to the primary telephone plant accounts upon the basis of estimates subject to appropriate adjustment when final data become available.

NOTE B.—In connection with completing the accounting for telephone plant purchased, appropriate adjustments shall be made in respect of any related depreciation accruals.

277. **Telephone plant sold.**—This account may be credited temporarily with the estimated book cost at the time of retirement of telephone plant sold pending determination of the amounts to be credited to the primary telephone plant accounts. (See also instruction 25–F.)

NOTE A.—Preliminary credits representing the estimated book cost of the telephone plant sold may be made to the primary telephone plant accounts subject to appropriate adjustment when final data become available.

NOTE B.—In connection with completing the accounting for telephone plant sold, appropriate adjustments shall be made in respect of any related depreciation accruals.

278. **Undistributed cost of property.**—This account shall include property costs as carried in account 204, "Other intangible capital," December 31, 1932, and not assignable to other primary accounts provided herein. (See also account 172.) It shall include also amounts as provided in instruction 21–D in respect to telephone plant purchased.

NOTE.—Indirect charges to telephone plant primary accounts such as interest, taxes, insurance, injuries and damages, etc., shall be apportioned to the accounts appropriate for the cost of the physical property involved.

280. **Construction work in progress.**—(A) This account shall include the cost of construction of telephone plant not completed ready for service at the date of the balance sheet including the cost of land acquired for which there is a definite plan for its use in telephone service. It shall include interest during construc-

tion, taxes during construction, and all other elements of cost of such construction work. (See also instructions 20 and 22.)

(B) When any telephone plant the cost of which has been included in this account is completed ready for service, the cost thereof shall be credited to this account and charged to the appropriate telephone plant or other accounts.

NOTE A.—It is not required that this account shall include the cost of construction work which will be completed ready for service within a short period, such as the installation of station apparatus, replacements of poles and other work completed within a period of one or two months.

NOTE B.—The balance in this account shall be shown as a separate item under account 100 in the short column of the balance sheet statement in the company's annual report to this Commission.

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INCOME STATEMENT

I. Telephone Operating Income

Items

1. Operating revenues (300).
2. Operating expenses (301).
3. Net operating revenues (Item 1 less item 2).
4. Rent from lease of operating property (302).
5. Rent for lease of operating property (303).
6. Operating taxes (305).
7. Net operating income (Items 3 and 4 less items 5 and 6).

II. Other Income

8. Dividend income (312).
9. Interest income (313).
10. Income from sinking and other funds (314).
11. Income from miscellaneous physical property (315).
12. Miscellaneous income (316).
13. Total other income (The sum of items 8 to 12, inclusive).

III. Miscellaneous Deductions from Income

14. Miscellaneous taxes (322).
15. Miscellaneous income charges (323).
16. Total miscellaneous deductions (The sum of items 14 and 15).
17. Income available for fixed charges (Items 7 and 13 less item 16).

IV. Fixed Charges

18. Interest on funded debt (335).
19. Other interest deductions (336).
20. Amortization of discount on funded debt (338).
21. Release of premium on funded debt—Cr. (339).
22. Other fixed charges (340).
23. Total fixed charges (The sum of items 18 to 22 inclusive).
24. Income after fixed charges (Item 17 less item 23).

V. Contingent Interest

25. Contingent interest on funded debt (341).
26. Net income (Net Profit) (Item 24 less item 25).

VI. Disposition of Net Income

27. Contractual reservations of income (342).
28. Miscellaneous reservations of income (343).
29. Dividend appropriations of income (344).
30. Total reservations and appropriations (The sum of items 27 to 29 inclusive).
31. Income balance (400) (Item 26 less item 30).

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INCOME ACCOUNTS

(Note particularly instructions 30 and 31)

I. Telephone Operating Income

300. **Operating revenues.**—This account shall include the total revenues for the accounting period which are provided for in the operating revenue accounts 500 to 530, inclusive. (See also instruction 2–C.)

301. **Operating expenses.**—This account shall include the total expenses for the accounting period which are provided for in the operating expense accounts 602 to 677, inclusive. (See also instruction 2–C.)

302. **Rent from lease of operating property.**—(A) This account shall include rents from the exclusive use of telephone operating property held as a whole and operated by others, such as a complete telephone plant, a complete exchange, or a complete toll system.

(B) Rents are creditable to this account whether receivable in cash or disbursed by the lessee in behalf of the company as taxes on the rented property, interest on funded debt, guaranteed dividends on stock or otherwise.

NOTE.—The rent from property the cost of which is includable in account 103 shall be included in account 313.

303. **Rent for lease of operating property.**—(A) This account shall include rents for the exclusive use of telephone operating property held as a whole and operated by the company, such as a complete telephone plant, a complete exchange, or a complete toll system.

(B) This account shall include also taxes borne by the lessee of property, the rent for which is chargeable to this account.

(C) Rents are chargeable to this account whether payable in cash or disbursed by the lessee in behalf of the lessor as taxes on the rented property, interest on funded debt, guaranteed dividends on stock or otherwise.

NOTE A.—If leased telephone plant the rent for which is chargeable to this account is sublet to others, the rent receivable therefrom shall be credited to the account appropriate for rent from owned property of the same class.

NOTE B.—Rents payable for property used by the company for other than telephone operations shall be included in account 315.

NOTE C.—Charges for depreciation of telephone operating property leased as a whole and operated by the company shall be included in account 606 or account 703, as appropriate, on the same basis as for owned property (see also instruction 31) when the company is responsible for depreciation under the terms of the lease.

305. **Operating taxes.**—(A) This account shall include all Federal, State, County, Municipal, and other taxing-district taxes, including franchise taxes payable annually or more frequently,

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relating to telephone property, operations, and privileges for the period for which the income account is stated. Taxes accrued through this account prior to their payment shall be credited to account 166, "Taxes accrued."

(B) Taxes on leased telephone plant shall be included in this account by the owner. Any taxes on rented telephone plant which are borne by the lessee shall be appropriately credited by the owner to account 524, "Rent revenues," or account 302, "Rent from lease of operating property," and charged by the lessee to account 671, "Operating rents," or account 303, "Rent for lease of operating property."

NOTE A.—Taxes on other than telephone property, operations, and privileges shall be charged to account 222.

NOTE B.—Special assessments for street and other improvements and special benefit taxes, such as water taxes and the like, shall be included in the operating expense accounts or investment accounts, as may be appropriate.

NOTE C.—Discount allowed for prompt payment of taxes shall be credited to the account to which the taxes are chargeable.

NOTE D.—Interest on tax assessments which are not paid when due shall be included in account 338.

NOTE E.—The accounting for taxes on physical property during construction and before the facilities are completed ready for service shall be in accordance with instruction 23-B-6.

NOTE F.—Taxes paid by the company under tax-free covenants on indebtedness shall be charged to account 340.

II. OTHER INCOME

312. **Dividend income.**—(A) This account shall include dividends on stock, the income from which is the property of the company, whether such stock is owned by the company and held in its treasury, or deposited in trust (except in sinking or other funds, see note B to this account) or controlled through lease or otherwise.

(B) Dividends shall not be credited to this account before actual collection, unless their payment is reasonably assured by past experience, guaranty, anticipated provisions, or otherwise.

NOTE A.—These accounts (note instruction 3-A) shall not include dividends or other returns on securities issued or assumed by the company and held by or for it, whether pledged as collateral, or held in its treasury, in special deposits or in sinking or other funds.

NOTE B.—Dividends on stocks of other companies held in sinking or other funds shall be credited to account 314.

313. **Interest income.**—(A) This account shall include interest on securities, including notes and other evidences of indebtedness, the income from which is the property of the company, whether such securities are owned by the company and held in its treasury, or deposited in trust (except in sinking or other funds, see note B to this account) or controlled through lease or otherwise. It shall include also interest on bank balances, certificates of deposits, open accounts, and other analogous items.

(B) Interest shall not be credited before actual collection, unless its payment is reasonably assured by past experience, guaranty, anticipated provisions, or otherwise.

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(C) This account shall be credited with such amounts as are charged to the telephone plant accounts for interest on funds expended for construction purposes, as provided in instruction 22–B–10.

(D) There may be included in this account for each month or other accounting period the applicable amount requisite to extinguish, during the interval between the date of acquisition and date of maturity, the difference between the purchase price and the par value of securities owned, the income from which is includable in this account. Amounts thus credited or charged shall be concurrently included in the accounts in which the securities are carried. Any such difference remaining unextinguished at the sale or at the maturity and satisfaction of such securities shall be cleared to account 413, "Miscellaneous debits to surplus," or account 402, "Miscellaneous credits to surplus."

NOTE A.—These accounts (note instruction 3–A) shall not include interest or other returns on securities issued or assumed by the company and held by or for it, whether pledged as collateral, or held in its treasury, in special deposits, or in sinking or other funds.

NOTE B.—Interest on cash and on securities issued by others shall be included in account 314 when such assets are held in sinking or other funds.

NOTE C.—Cash discount on bills for material purchased shall not be included in this account. (See also account 122.)

314. Income from sinking and other funds.—(A) This account shall include the income accrued on cash, securities issued by other companies, and other assets (not including securities issued or assumed by the company) held in sinking and other funds.

(B) There may be included in this account for each month or other accounting period the applicable amount requisite to extinguish, during the interval between the date of acquisition and the date of maturity, the difference between the purchase price and the par value of securities held in sinking or other funds. Amounts thus credited or charged shall be concurrently included in the accounts in which the securities are carried. Any such difference remaining unextinguished upon the maturity and satisfaction of such securities shall be cleared to account 413, "Miscellaneous debits to surplus," or account 402, "Miscellaneous credits to surplus."

NOTE.—Income from sinking and other funds required to be held in such funds, and credits to reserve accounts representing income from funds, shall be accounted for as provided in instruction 31.

315. Income from miscellaneous physical property.—This account shall include the net balance of the revenues from and the expenses (including depreciation and insurance) of physical property the cost of which is includable in account 103, "Miscellaneous physical property," and also of physical property of others leased and used by the company for other than telephone operations. The rent for leased property which is used by the company for other than telephone operations, assessments when borne by the

company for maintenance of public improvements against property the cost of which is includable in account 103, and directly assignable administration expenses incident to operation of miscellaneous physical property, shall be included in this account.

NOTE A.—Net credit balances shall be shown in the income statement of the report to this Commission in black and net debit balances in red.

NOTE B.—Taxes on miscellaneous physical property shall be included in account 322.

316. Miscellaneous income.—This account shall include all items, not provided for elsewhere, properly creditable to Income.

ITEMS TO BE CREDITED

[Note instruction 6]

Fees collected in connection with the exchange of coupon bonds for registered bonds.

Profits from the telephone operations of other companies realized by the company under contracts.

Profits realized from custom work performed for others not incident to the company's telephone operations.

III. MISCELLANEOUS DEDUCTIONS FROM INCOME

322. Miscellaneous taxes.—This account shall include all taxes not provided for elsewhere, such as taxes on miscellaneous physical property. (See also instruction 22–B–8.) Taxes accrued through this account prior to their payment shall be credited to account 166, "Taxes accrued."

NOTE A.—Special assessments for street and other improvements and special benefit taxes, such as water rates and the like, shall be included in the operating expense accounts or investment accounts, as may be appropriate.

NOTE B.—Discounts allowed for the prompt payment of taxes shall be credited to the account to which the taxes are chargeable.

NOTE C.—Interest on tax assessments which are not paid when due shall be included in account 338.

323. Miscellaneous income charges.—This account shall include all items not provided for elsewhere properly chargeable to Income.

ITEMS TO BE CHARGED

[Note instruction 6]

Current expenses of trustees in maintaining and administering trusts incident to outstanding debt of the company.

Membership fees and dues in associations which do not have some direct or intimate relation to the telephone operations of the company.

Uncollectible accounts previously credited to accounts 313 to 316, inclusive. (See also instruction 11 and note to account 232.)

IV. FIXED CHARGES

325. Interest on funded debt.—(A) This account shall include the current accruals of interest on all classes of debt the principal of which is includable in account 134, "Funded debt," and account 135, "Reacquired securities," except interest provided for in account 241, "Contingent interest on funded debt." (See also instruction 23–B–10.) It shall include the interest on funded

debt the maturity of which has been extended by specific agreement.

(B) This account shall be kept in such form that the interest on each class of funded debt and on receivers' certificates may be shown separately in the annual report to this commission.

NOTE A.—These accounts (note instruction 8-A) shall not include charges for interest on funded debt issued or assumed by the company and held by or for it, whether pledged as collateral or held in its treasury, as special deposits, as sinking or other funds.

NOTE B.—Interest expressly provided for and included in the face amount of securities issued shall be charged at the time there is incurred the liability and credited to this account as the same expires to which the interest applies.

236. Other interest deductions.—(A) This account shall include all interest deductions not provided for elsewhere. Discount, premiums, and expenses on notes maturing one year or less from date of issue shall be included in this account in equal monthly installments throughout the term of the notes or included herein at the time such notes are issued. (See also instruction 22-B-20.)

(B) A list of representative items of indebtedness follows, the interest on which is chargeable to this account (note instruction 8):

Advances from affiliated companies. (See also account 181.)
Advances from nonaffiliated companies, and other liabilities included in account 187.
Assessments for public improvements past due.
Bond coupons, matured and unpaid.
Capital stock subscriptions, receipts for installments on.
Claims and judgments.
Customers' deposits.
Funded debt matured, with respect to which a definite agreement as to extension has not been made.
Notes payable on demand or maturing one year or less from date of issue.
Open accounts.
Tax assessments, past due.

NOTE.—Interest payable on notes or other evidences of indebtedness maturing serially shall be charged to account 236 if any portion of the obligation matures more than one year from date of issue.

237. Amortization of discount on funded debt.—This account shall include during each month or other accounting period such proportion of the unamortized debit balance in each particular discount, premium, and expense account for actually outstanding funded debt as is applicable to that period. This proportion shall be determined in accordance with instruction 15.

238. Release of premium on funded debt—Cr.—This account shall include during each month or other accounting period such proportion of the unextinguished credit balance in each particular discount, premium, and expense account for actually outstanding funded debt as is applicable to that period. This proportion shall be determined in accordance with instruction 15.

240. Other fixed charges.—This account shall include all items of fixed charges not provided for elsewhere properly chargeable to income of the accounting period, such as taxes paid by the company under tax-free covenants on indebtedness.

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V. CONTINGENT INTEREST

341. Contingent interest on funded debt.—This account shall include accrued interest payable on funded debt, when a claim against income after fixed charges and prior to the interests of stockholders in the earnings of the company, such as interest on income bonds.

VI. DISPOSITION OF NET INCOME

342. Contractual reservations of income.—This account shall include reservations chargeable to income, when specifically required under the terms of mortgages, deeds of trust, orders of courts, contracts, or other agreements. (See also instruction 31.)

NOTE A.—Reservations of income resting in the discretion of the company (i. e., not required by mortgages, contracts, etc.) shall be charged to account 343.

NOTE B.—Amounts charged to this account shall be concurrently credited to the appropriate reserve accounts.

343. Miscellaneous reservations of income.—This account shall include reservations of income for purposes not provided for elsewhere and not specifically required under terms of mortgages, contracts, etc. It shall include appropriations for investment in telephone plant, and income reserved at the company's discretion on account of rate litigations, etc. (See also instruction 31.)

NOTE.—Amounts charged to this account shall be concurrently credited to the appropriate reserve accounts.

344. Dividend appropriations of income.—(A) This account shall include dividends on capital stock actually outstanding, if chargeable to income.

(B) If a dividend is not payable in cash, the consideration shall be described in the entry with sufficient particularity to identify it.

(C) This account shall be kept in such form that the dividends on each class of capital stock may be shown separately in the annual report to this commission.

NOTE A.—These accounts (qvie instruction 6-A) shall not include charges for dividends on capital stock issued or assumed by the company and held by or for it, whether pledged as collateral, or held in its treasury, in special deposits or in sinking or other funds.

NOTE B.—Dividend appropriations of surplus shall be charged to account 416.

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SURPLUS STATEMENT

CREDITS:

181. Unappropriated surplus (at beginning of period).[1]
400. Income balance.[2]
401. Credits for telephone plant sold.
402. Miscellaneous credits to surplus.

DEBITS:

410. Debits for telephone plant sold.
413. Miscellaneous debits to surplus.
414. Contractual reservations of surplus.
415. Miscellaneous reservations of surplus.
416. Dividend appropriations of surplus.
181. Unappropriated surplus (at end of period).[1]

SURPLUS ACCOUNTS

(Note particularly instruction 40)

400. Income balance.—An account, under this title, shall be maintained in the general books of the company. The balance of all income primary accounts (300 to 344, inclusive) shall be closed into this account at the end of each calendar year.

401. Credits for telephone plant sold.—This account shall include amounts creditable to surplus in accordance with instructions 25–C and 25–F, in connection with the sale of telephone plant.

402. Miscellaneous credits to surplus.—This account shall include amounts creditable to surplus not provided for elsewhere. Among the items which shall be credited to this account are (note instruction 8):

Amount of the credit balance in discount, premium and expense account relating to funded debt reacquired at the time of its reacquirement. (See also instruction 15–E.)

Amount of the credit balance in the discount and premium account relating to capital stock reacquired at the time of its reacquirement. (See also instruction 14–E.)

Amounts received for abrogation of contracts.

Credits for amounts previously written off through charges to surplus.

Credits resulting from adjustments required to bring to par securities issued or assumed by the company and reacquired at a cost less than the par value. (See also instruction 13.)

Delayed credits to income, operating revenue, and operating expense accounts as provided in instruction 5.

Forfeitures of amounts deposited under options for the sale or lease of property.

Profit derived from the sale of securities of other companies.

Profit derived from the sale of property carried in account 103. (See also account 174.)

Profit derived from the sale of unexpired leases.

Unclaimed customers' deposits.

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[1] If a deficit, the balance shall be shown in red.
[2] If a loss, the balance shall be shown in red.

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Unclaimed dividends.
Unclaimed wages and vouchers or accounts written off.

NOTE.—An analysis of this account will be required in annual reports of the company to this Commission.

410. Debits for telephone plant sold.—This account shall include amounts chargeable to Surplus in accordance with instructions 25–C and 25–F, in connection with the sale of telephone plant.

413. Miscellaneous debits to surplus.—This account shall include amounts chargeable to surplus not provided for elsewhere. Among the items which shall be charged to this account are (note instruction 8):

Amortization, at company's option, of balances in accounts 201 and 278.
Amortization unprovided for elsewhere.
Amounts charged to surplus to cover past accrued depreciation not provided for. (See also account 171.)
Amount of the debit balance in discount, premium and expense account relating to funded debt reacquired at the time of its reacquirement. (See also instruction 13–E.)
Amount of the debit balance in the discount and premium account relating to capital stock reacquired at the time of its reacquirement. (See also instruction 14–E.)
Amounts charged to surplus to extinguish all or any part of the debit balance in any particular discount and premium account for capital stock actually outstanding. (See also instruction 14–E.)
Amounts charged to surplus to extinguish all or any part of the debit balance in any particular discount, premium, and expense account for funded debt actually outstanding. (See also instruction 13–E.)
Amounts paid for abrogation of contracts.
Appropriations to temper stock liability account.
Contributions for charitable or social or community welfare purposes which do not have a direct or intimate relation to the protection of the property of the company or to the development of its business or the welfare of its employees.
Debits resulting from adjustments required to bring to par securities issued or assumed by the company and reacquired at a cost exceeding the par value. (See also instruction 13.)
Delayed debits to income, operating revenue, and operating expense accounts as provided in instruction 8.
Forfeitures of amounts deposited under options for the purchase or lease of property.
Inventory and appraisal sums taken credited to the purchase, sale, or lease property where the transactions are abandoned.
Losses resulting from the sale, destruction, or retirement of property carried in account 102. (See also account 176.)
Losses resulting from the sale of securities of other companies.
Payments of amounts previously written off through credits to surplus.

NOTE.—An analysis of this account will be required in annual reports of the company to this Commission.

414. Contractual reservations of surplus.—This account shall include reservations chargeable to surplus when specifically required under the terms of mortgages, deeds of trust, orders of courts, contracts, or other agreements. (See also instruction 31.)

NOTE A.—Reservations of surplus resting in the discretion of the company (i. e., not required by mortgages, contracts, etc.) shall be charged to account 415.

NOTE B.—Amounts charged to this account shall be concurrently credited to the appropriate reserve accounts.

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415. Miscellaneous reservations of surplus.—This account shall include reservations of surplus for purposes not provided for elsewhere and not specifically required under terms of mortgages, contracts, etc. It shall include appropriations for investment in telephone plant and surplus reserved at the company's discretion on account of rate litigations, etc. (See also instruction 31.)

NOTE.—Amounts charged to this account shall be concurrently credited to the appropriate reserve accounts.

416. Dividend appropriations of surplus.—(A) This account shall include dividends on capital stock actually outstanding, if chargeable to surplus.

(B) If a dividend is not payable in cash the consideration shall be described in the entry with sufficient particularity to identify it.

(C) This account shall be kept in such form that the dividends on each class of capital stock may be shown separately in the annual report to this Commission.

NOTE A.—These accounts (note instruction 3-A) shall not include charges for dividends on capital stock issued or assumed by the company and held by or for it, whether pledged as collateral, or held in its treasury, in special deposits, or in sinking or other funds.

NOTE B.—Dividend appropriations of income shall be charged to account 344.

OPERATING REVENUE ACCOUNTS

ACCOUNTS FOR CLASS A COMPANIES

I. LOCAL SERVICE REVENUES.
- 500. Subscribers' station revenues.
- 501. Public telephone revenues.
- 502. Service stations.
- 504. Local private line services.
- 509. Other local service revenues.

II. TOLL SERVICE REVENUES.
- 510. Message tolls.
- 512. Toll private line services.
- 516. Other toll service revenues.

III. MISCELLANEOUS REVENUES.
- 521. Telegraph commissions.
- 522. Directory advertising and sales.
- 524. Rent revenues.
- 526. Revenues from general services and licenses.
- 528. Other operating revenues.

IV. UNCOLLECTIBLE REVENUES.
- 530. Uncollectible operating revenue—Dr.

ACCOUNTS FOR CLASS B COMPANIES

I. LOCAL SERVICE REVENUES.
- 500. Local service revenues.

II. TOLL SERVICE REVENUES.
- 510. Toll service revenues.

III. MISCELLANEOUS REVENUES.
- 520. Miscellaneous operating revenues.

IV. UNCOLLECTIBLE REVENUES.
- 530. Uncollectible operating revenue—Dr.

OPERATING REVENUE ACCOUNTS

(Note particularly instructions 4, 5, 6, 50, 51, and 52)

I. LOCAL SERVICE REVENUES

500. Subscribers' station revenues.—This account shall include local service revenues from business and residence subscribers' service and from semipublic service, including such revenues

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from main stations, private branch exchange systems, order turrets, and other subscribers' stations, whether the charge is based upon a flat rate or a measured rate. It shall include local service revenues from mileage charges and auxiliary equipment in connection with such subscribers' service. This account shall include also revenues from directory listings for such subscribers' service requirements, such as listings of extra names and alternate call numbers in the alphabetical sections of directories.

NOTE A.—Local service revenues from public telephones and from service stations shall be credited to accounts 501 and 502, respectively.

NOTE B.—Revenues from advertising in directories (i. e., other than listings for service requirements) shall be credited to account 509.

501. Public telephone revenues.—This account shall include local service revenues from public telephone service.

NOTE A.—Local service revenues from semipublic service shall be credited to account 500.

NOTE B.—Public telephone commissions shall be charged to account 648.

502. Service stations.—This account shall include local service revenues from stations the lines or equipment of which are provided wholly or in part by others and to which the company furnishes local service, switching service, or both.

504. Local private line services.—This account shall include local service revenues from private line services and facilities furnished between points in the same local service area under contracts providing exclusive service, either continuously or during stated periods (i. e., service not requiring central office switching operations). It shall include local private line service revenues from lines furnished for such purposes as telephone, telegraph, teletypewriter, public address, radio program transmission, and remote control. It shall include also charges for toll terminals and local loops furnished either continuously or during stated periods in connection with toll services (including those furnished for use in connection with lines of other companies); and charges for instruments and equipment, when furnished in connection with such lines and loops.

506. Other local service revenues.—This account shall include all local service revenues not provided for elsewhere.

II. Toll Service Revenues

510. Message tolls.—(A) This account shall include toll service revenues from the transmission of messages, including such revenues from messages transmitted entirely over the company's own lines, and amounts representing divisions of toll service revenues received, (a) from messages transmitted partly over the company's lines and partly over lines of other companies, (b) as compensation for originating or terminating toll messages of other companies, and (c) as compensation for switching toll messages between lines of other companies.

(B) This account shall include revenues from guarantees at toll stations and from messenger service in notifying persons of toll calls.

512. Toll private line services.—This account shall include toll service revenues from private line services and facilities furnished between different local service areas under contracts providing exclusive service either continuously or during stated periods, including, (a) revenues from services involving only the use of the company's own lines, and (b) amounts representing divisions of toll private line service revenues when such service involves the use of lines of other companies. It shall include toll private line service revenues from lines furnished for such purposes as telephone, telegraph, teletypewriter, public address, radio program transmission, and remote control.

NOTE A.—Charges for local loops furnished either continuously or during stated periods and the instruments used in connection therewith (including those furnished for use in connection with lines of other companies) shall be credited to account 504.

NOTE B.—Toll service revenues from the transmission of messages charged for on a per-message basis shall be included in account 510.

516. Other toll service revenues.—This account shall include all toll service revenues not provided for elsewhere.

III. Miscellaneous Revenues

521. Telegraph commissions.—This account shall include commissions receivable for the billing or collection of telegraph, cable, or wireless tolls on messages transmitted by others.

523. Directory advertising and sales.—This account shall include revenues from advertising in directories, and from the sale or furnishing of new directories either of the company's own issue or directories purchased from others. It shall include all revenues from the classified sections and from bold-face listings, marginal displays, inserts, cover and other advertisements in alphabetical sections of directories.

NOTE A.—Revenues from directory listings for service requirements, such as listings of extra names and alternate call numbers in the alphabetical sections of directories, shall be credited to account 500.

NOTE B.—Revenues from advertising other than in directories shall be credited to account 526.

NOTE C.—Amounts received as salvage on old directories shall be credited to account 642.

524. Rent revenues.—This account shall include revenues, including taxes when borne by the lessee, from the rental or subrental to others of telephone plant constituting a part of the property used by the company in its telephone operations, such as instruments, equipment, and lines furnished apart from telephone service (note instruction 3–AA) rendered by the company; space in conduits; pole line space for attachments; space in buildings; and carrying charges on property used in joint operations (see also instruction 62 and note B to this account).

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NOTE A.—The expenses of maintaining and operating the rented property, including depreciation and insurance, shall be included in the appropriate operating expense account. Taxes applicable to the rented property shall be included by the owner of the rented property in account 508.

NOTE B.—Rents from the exclusive use of telephone operating property held as a whole and operated by others such as a complete telephone plant, a complete exchange, or a complete toll system, shall be included in account 502.

525. **Revenues from general services and licenses.**—This account shall include amounts accruing for services rendered other companies under a license agreement, general service contract, or other arrangement providing for the furnishing of general accounting, engineering, financial, legal, patent, and other general services.

526. **Other operating revenues.**—This account shall include all miscellaneous operating revenues not provided for elsewhere, such as amounts charged for private branch exchange operating services performed by operators regularly employed by the telephone company; flat amounts (not divisions of revenue or reimbursements of costs) charged other telephone companies for operating services on toll lines of such companies terminating in the switchboard of the accounting company; revenues from advertising other than in directories; unclaimed refunds or overcharges on telephone service; and profits realized from custom work performed for others incident to the company's telephone operations.

IV. Uncollectible Revenues

530. **Uncollectible operating revenues—Dr.**—(A) This account shall include amounts credited to the operating revenue accounts which have proved impracticable of collection. (See also instruction 11 and account 118–B.)

(B) This account may include monthly charges based on estimates, to provide a reserve for uncollectible accounts due from customers and agents. Amounts thus charged to this account shall be credited to subaccount (B), "Reserve for uncollectible accounts—Cr.," under account 118, "Due from customers and agents."

(C) When revenue which has been written off through this account is collected, the amount of the collection shall be credited to this account.

NOTE.—Uncollectible amounts which have not been treated as operating revenues shall be charged to account 238, account 413, or other appropriate account.

OPERATING EXPENSE ACCOUNTS

ACCOUNTS FOR CLASS A COMPANIES	ACCOUNTS FOR CLASS B COMPANIES
1. MAINTENANCE EXPENSES.	1. MAINTENANCE EXPENSES.
602. Repairs of outside plant.	602. Repairs of outside plant.
603. Repairs of central office equipment.	603. Repairs of central office equipment.
604. Repairs of station equipment.	604. Repairs of station equipment.
605. Repairs of buildings and grounds.	605. Repairs of buildings and grounds.

ACCOUNTS FOR CLASS A COMPANIES—Continued.

I. MAINTENANCE EXPENSES—Contd.
- 607. Station removals and changes.
- 608. Depreciation.
- 609. Extraordinary retirements.
- 610. Maintaining transmission power.
- 611. Employment stabilization.
- 612. Other maintenance expenses.

II. TRAFFIC EXPENSES.
- 621. General traffic supervision.
- 622. Service inspection and customer instruction.
- 624. Operators' wages.
- 626. Rest and lunch rooms.
- 627. Operators' employment and training.
- 628. Central office stationery and printing.
- 630. Central office house service.
- 631. Miscellaneous central office expenses.
- 632. Public telephone expenses.
- 633. Other traffic expenses.
- 634. Joint traffic expenses—Dr.
- 635. Joint traffic expenses—Cr.

III. COMMERCIAL EXPENSES.
- 640. General commercial administration.
- 642. Advertising.
- 643. Sales expenses.
- 644. Connecting company relations.
- 645. Local commercial operations.
- 648. Public telephone commissions
- 649. Directory expenses.
- 650. Other commercial expenses.

IV. GENERAL OFFICE SALARIES AND EXPENSES.
- 661. Executive department.
- 662. Accounting department.
- 663. Treasury department.
- 664. Law department.
- 665. Other general office salaries and expenses.

V. OTHER OPERATING EXPENSES.
- 668. Insurance.
- 669. Accidents and damages.
- 671. Operating rents.
- 672. Relief and pensions.
- 673. Telephone franchise requirements.
- 674. General services and licenses.
- 675. Other expenses.
- 676. Telephone franchise requirements—Cr.
- 677. Expenses charged construction—Cr.

ACCOUNTS FOR CLASS B COMPANIES—Continued.

I. MAINTENANCE EXPENSES—Contd.
- 607. Station removals and changes.
- 608. Depreciation.
- 609. Extraordinary retirements.
- 610. Maintaining transmission power.
- 611. Employment stabilization.
- 612. Other maintenance expenses.

II. TRAFFIC EXPENSES.
- 624. Operators' wages.
- 633. Other traffic expenses.

III. COMMERCIAL EXPENSES.
- 640. Commercial expenses.

IV. GENERAL OFFICE SALARIES AND EXPENSES.
- 665. General office salaries and expenses.

V. OTHER OPERATING EXPENSES.
- 675. Other operating expenses.

OPERATING EXPENSE ACCOUNTS

(Note particularly instructions 4, 5, 6, 25, and 60 to 64, inclusive)

II. Maintenance Expenses

602. **Repairs of outside plant.**—This account shall include the cost of repairing pole lines, cable, aerial wire and underground conduit, and the cost of maintaining right of way for such plant.

ITEMS

[Note instruction 8]

Cleaning manholes and ducts. (See also note A to this account.)
Clearing defective cable pairs.
Cutting out or cutting in slack in aerial wire.
Inspecting, testing, and reporting on the condition of outside plant to determine need for repairs or replacements.
Installing, transferring, replacing, and removing cross-connection wires and fuses in cable terminals or boxes. (See also note B to this account.)
Moving poles, wires, cables, and other outside plant in connection with road and street changes. (See also instruction 25.)
Opening pavement and repaving in connection with repairs of outside plant.
Opening, testing, splicing, and other work of transferring pairs in cable and transferring cable from one cable or stub to another cable or stub.
Painting and creosoting poles and pole butts subsequent to their installation.
Permits and privileges for maintenance work.
Rearranging wires on pins.
Repairing used outside plant material for reuse.
Replacing minor items of outside plant including labor and material used and the removal and recovery of the items retired less salvage recovered, except when such items are replaced through the replacement of units of property. (See also instruction 25.)
Reracking cables.
Respacing poles and crossarms.
Restoring condition of outside plant damaged by storms, fires, or other casualties. (See also instruction 25.)
Right of way adjustments, cost of, when no additional rights are secured.
Straightening poles and crossarms.
Testing for, locating and clearing trouble.
Tests and surveys of existing plant to detect presence of electrolysis. (See also note C to this account.)
Tightening guys and raking guy stubs.
Tightening suspension strand and cutting out cable slack.
Transferring crossarms, guys, wires, cables, cable boxes, and other outside plant in connection with replacements of poles and crossarms.
Transposing or retransposing existing aerial wire, including such work for the removal of electrical interference and for the creation of phantom and carrier circuits subsequent to the original installation of the wires. (See also note D to this account.)
Trenching poles.
Trimming trees, cutting underbrush, and other work to maintain previous clearance of right of way.
Work on the property of others in connection with the maintenance of outside plant of the accounting company. (See also note E to this account.)

NOTE A.—The cost of cleaning manholes and ducts in connection with construction work and not necessary in the maintenance or operation of the plant shall be included in the account chargeable with the cost of the construction work.

NOTE B.—The cost of cross-connection wires and fuses installed in the first equipment for service of cable terminals or boxes shall be charged to account 242.

NOTE C.—The cost of tests for electrolysis made in the course of construction shall be included in the cost of the cable installed.

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NOTE D.—The cost of any betterments and plant added resulting from such work shall be included in the appropriate telephone plant accounts.

NOTE E.—Expenses on account of property of others damaged in connection with maintenance work, except for the cost of incidentally repairing property of others in the course of such work, shall be charged to account 668.

NOTE F.—The cost of repairing drop and block wires shall be charged to account 608.

604. **Repairs of central office equipment.**—(A) This account shall include the cost of repairing central office equipment.

(B) This account shall include also the pay and expenses of plant department forces engaged in maintaining and operating equipment for producing electricity for transmitting traffic and operating signals.

ITEMS

[Note instruction 6]

Adding acid and water to batteries and reading specific gravity, current drain and voltage of batteries.

Cleaning equipment.

Disconnecting and reconnecting customers' lines in central offices for temporary periods of nonuse or for nonpayment of bills.

Disconnecting customers' lines in central offices due to termination of service.

House service. (See also account 707.)

Lubrication, adjustment, and cleaning of power equipment, including the lubrication and cleaning of drive motors and driving mechanism in panel offices.

Operating prime movers, generators, and motors.

Rearranging and replacing frame cross-connection wires. (See also note A to this account.)

Regulating power for repeaters.

Removing sediment from storage batteries and the cost of repairing storage batteries, including replacements of minor items.

Repairing used central office equipment for reuse.

Replacement of central office dry cell batteries.

Replacing minor items of central office equipment including labor and material used and the removal and recovery of the items retired less salvage recovered, except when such items are replaced through the replacement of units of property. (See also instruction 26.)

Starting, stopping, and watching operation of power equipment.

Supplies, such as acid, caustic soda, cheese cloth, commutator paste, dry cells, electrolyte, kerosene, oil, and waste.

Testing for, locating, and clearing trouble. (See also note B to this account.)

Tools and other individual central office equipment—items of small value or short life, cost and repairs of. (See also instruction 20-E.)

Training employees for central office repair work.

Underlining switchboard jacks, renewing switchboard markings, and placing and changing number plates, and designation strips not incident to construction. (See also note C to this account and instruction 63.)

Watching and regulating the operation of repeaters, duplex and multiplex apparatus on telephone and telegraph lines.

NOTE A.—The cost of work on central office frames incident to routine station and line turnover and growth, including the placing, removing, or rearrangement of cross connections (including the cost, less salvage, of the cross connection wire, lead coils, protector blocks, etc.), and the opening and closing of lines on the frame, may be currently charged direct to this account and, before the close of the calendar year, adjustment made between this account and account 221 for the net increase in central office investment or between account 231 and account 171 for the net decrease in such investment, due to increase or decrease in lines.

NOTE B.—The pay and expenses of test-board men and other employees in central offices engaged in testing circuits in plant outside of central offices, testing with station repairmen, installers, etc., shall be included in the appropriate maintenance and tele-

[illegible] involved. (See also Instruction 63.)

Note C.—The pay of chiefs of the traffic department when employed in such work shall be charged to account 604. The cost of placing operator plates, designation strips, marking switchboard mortises, and similar work in connection with [illegible] shall be included in account 604.

Note D.—The cost of power produced for house service purposes shall be charged to account 707 or other account, as may be appropriate.

Note E.—The cost of electricity purchased and the cost of coal, gas, gasoline, oil and other fuel used in the operation, conversion, and storage of current for transmitting bells and operating signals shall be included in account 610.

604. **Repairs of station equipment.**—(A) This account shall include the cost of repairing station apparatus, station installations (including inside wires), drop and block wires, private branch exchanges and booths, and special fittings.

(B) This account shall include also such costs of extensive replacements of station apparatus and inside, drop, and block wires, which, under conditions provided in instruction 64, have been carried in suspense in account 138, "Extraordinary maintenance suspense."

Items

[See instruction 6]

Changing type of station apparatus, such as from desk set to hand set, wall set to desk set, magneto to common battery, or manual to dial. (See also note A to this account.)

Changing drop wires from street to alley or interior block distribution, together with associated changes of inside wires.

Changing equipment.

Inside moves (moves or relocations on the same premises or at the same address) of station apparatus, private branch exchanges and booths, and special fittings. (See also note B to this account.)

Inspecting, testing, and reporting on condition of equipment to determine need for repairs or replacements.

Labor, traveling, and other incidental costs of replacing any items (including "costs of preparing") of station apparatus. (See also note A to this account.)

Material used in replacing minor items of station apparatus. (See also instruction 24.)

Moving pilot changes not incident to station connections.

Relocating inside, drop, and block wires.

Removing retirement items and cleaning private branch exchange batteries.

Repainting and other repairs of booths, including those owned by others.

Repairing [illegible] station equipment for rent.

Repairing locations and equipment classified to account 232 and cost and repairs of inside (and house) lines of small value or short life. (See also instruction 23-B.)

Replacing [illegible] items of private branch exchanges and booths and special fittings, including labor and material used and the removal and recovery of the items retired [illegible] recovered, except when such items are replaced through the [illegible] of property. (See also instruction 24.)

Restoring inside, drop, and block wires.

Rewiring station [illegible]

Rewiring [illegible] to conform to [illegible] (except [illegible] moves) of drop or block wires, in the course of extensive plant rearrangements, such as the replacement of such wires by cable.

Routine work to prevent trouble, such as tightening bars to protect against drop wires.

Testing, inspecting, and clearing trouble in station equipment.

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806. Repairs of buildings and grounds.—This account shall include the cost of repairing buildings and grounds, their fixtures and appurtenances, except as provided in the items of the clearing accounts in respect to rented quarters.

Items

(Changing location of partitions. (See also note A to this account.)

Maintaining public improvements, including assessments covering such work.

Maintaining yards and grounds, including their fences, shrubbery, sidewalks and sewers.

Minor improvements of leased buildings, quarters, and grounds. (See also instruction 2k.)

Repairing and replacing partitions, including relocating interior of buildings.

Repairing building machinery, boilers, apparatuses, and appliances, such as elevators, shoveling, and equipment for heating, lighting, and ventilating.

Repairing owned buildings, quarters, and grounds, except when the rented property is used in operations the expense of which is assignable to the clearing accounts.

Replacing and repairing sashes, blinds, window shades and ventilators, storm doors, storm windows, movable partitions, and similar movable minor items of buildings. (See also note B to this account.)

Replacing minor items of equipment, including tools and material used and the removal and recovery of the same when any of the foregoing work is performed by hired labor, except when such items are replaced through the requirement of units of occupancy. (See also instruction 2f and note C to this account.)

Restoring conditions of buildings or grounds destroyed by the course of repairs, replacements, additions, or betterments. (See also note C to this account.)

Note A.—The cost of any permanent features or equipment for permanent painting here such charges shall be charged or credited, as appropriate, to account 808.

Note B.—Minor alterations of a movable character, such as doors, sashes, and glass, or wood and glass are required by alterations of a permanent type (for example, brick walls or tile roofs, the cost involved shall be credited to account 808, through the telephone plant and depreciation reserve accounts.

Note C.—The cost of minor detailed alterations incident to the introduction of economy devices, such as opening and closing holes in buildings, partitions, walls and floors, to permit replacement of equipment, heater controls and wiring, shall be charged to account 808.

Note D.—The cost of minor improvements (including removal, transportation, erection and installation) to the permanent fixtures of leased buildings or grounds shall be charged to account 808 or account 809, as appropriate, except that where the improvement is minor in character and is made at the request of the lessor, the expenditure shall be charged to account 811 or account 812

607. Station removals and changes.—(A) This account shall include the expense of removing stations due to the termination of service together with the resultant loss of investment in station installations, drop and block wires, and the expense of station disconnections, reconnections, and reinstallations, as follows:

(B) When stations are removed from subscribers' premises, the original cost (actual or estimated average unit cost) of the station installations (including inside wires) carried in account 232, "Station installations," and of any drop and block wires thereby retired from service, shall be credited to the appropriate telephone plant accounts and charged to this account, which shall be credited with the value of any salvage recovered therefrom. The cost of removing the station apparatus, inside, drop and block wires, including transportation costs incurred in the recovery of the material, shall be charged to this account.

(C) When stations are disconnected but left on premises (either for nonpayment or other discontinuance of service) this account shall be charged with the cost of disconnecting the station equipment; and when reconnected, the cost of reconnecting shall also be charged hereto.

(D) When stations are reinstalled on premises from which the station apparatus had previously been removed, if inside wire or ground wire left from a previous installation is reused, wholly or in part, the cost of installing the station apparatus (not including the cost of the apparatus which shall be charged to account 231) and of placing the inside wire again in service shall be charged to this account, and this account shall be credited and account 232, "Station installations," charged with the average cost of a station installation (including inside wire) in place; if drop or block wire left from a previous installation is reused, wholly or in part, the cost of placing such wire again in service shall be charged to this account, and this account shall be credited and account 233, "Drop and block wires," charged with the average cost of a drop or block wire in place.

NOTE A.—The cost of disconnecting and reconnecting subscribers' lines in central offices shall be charged to account 604.

NOTE B.—Amounts charged subscribers for restoration of service shall be credited to account 532 or to other revenue accounts appropriate for the class of service involved.

608. Depreciation.—This account shall include the amount of depreciation charges applicable to the accounting period for all classes of depreciable telephone plant, except for plant classified in account 264, "Vehicles and other work equipment." The depreciation charges shall be made in accordance with instructions 22–C, 80, 81, and 82. (See accounts 315 and 174 for depreciation of miscellaneous physical property.)

609. Extraordinary retirements.—This account shall include the proportion of the service value of telephone plant retired, carried in account 188, "Extraordinary maintenance suspense," which by specific authority of this Commission shall be charged to

operating expenses for the period. (See also instruction 83 and par. (A) of account 138.)

610. **Maintaining transmission power.**—This account shall include the cost of power of transmitting traffic and operating signals. It shall include the cost of electricity purchased and the cost of coal, gas, gasoline, oil and other fuel used in the generation, conversion and storage of current for operating dial system, repeater, and carrier equipment, ringing machines, ticket distributor systems, battery charging machines, coin collection equipment, and for other transmission power requirements of central office equipment, private branch exchanges, and other station equipment.

NOTE A.—Payments for the installation in central offices of permanent power circuits for emergency use shall be charged to the appropriate plant account. Payments to others made with a provision for reimbursement as power is used shall be treated as a prepayment and cleared by charges to this account or other appropriate account.

NOTE B.—The cost of power produced for house service purposes shall be charged to account 707, or other account as may be appropriate.

NOTE C.—The pay and expenses of central office forces engaged in the generation, conversion, and regulation of transmission power shall be charged to account 604.

611. **Employment stabilization.**—(A) This account shall include amounts systematically accrued in respect of maintenance work to be performed in accordance with an employment stabilization program designed to spread the total volume of maintenance work more evenly from year to year. Charges to this account shall be made only after approval by this Commission of the company's employment stabilization program, the plan of administration of the program, the character of the work to whith sums accrued may subsequently be applied and the amount of the monthly or annual accruals for stabilization purposes.

(B) Amounts charged to this account shall concurrently be credited to account 173, "Employment stabilization reserve."

(C) When maintenance work for which provision has been made through this account is performed, the cost of such work shall be charged to and included in the appropriate maintenance expense accounts. Concurrently, this account shall be credited and account 173, "Employment stabilization reserve," shall be charged with an amount equal to the cost of such work.

612. **Other maintenance expenses.**—This account shall include all maintenance expenses not properly chargeable to other accounts.

II. TRAFFIC EXPENSES

621. **General traffic supervision.**—This account shall include the pay, office, traveling, and other expenses of officers directly in charge of the general supervision of traffic, either for the company as a whole or a territorial subdivision; also the pay and expenses of their assistants and office forces.

ITEMS

[Note instruction 8]

House service. (See also account 707.)

Medical examiners and their assistants, welfare supervisors, and nurses engaged in the traffic department, pay and expenses of. (See also note A to this account.)

Office supplies.

Postage, printing, and stationery.

Preparing tariff and route data, traffic department's expense of. (See also note B to this account.)

Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.

Traffic superintendents, managers, chiefs, supervisors, and engineers, pay and expenses of. (See also note C to this account.)

Traveling expenses.

NOTE A.—The pay and expenses of physicians and nurses engaged in work such as conducting physical examinations of employees for all departments, giving general health advice, providing first-aid treatment, supervising and investigating sickness cases, and in other general relief activities shall be charged to account 672. The pay of nurses assigned to operators' quarters shall be charged to account 626.

NOTE B.—The traffic department's proportion of the expense of printing and distributing tariff and route data shall be charged to account 659.

NOTE C.—The cost of traffic engineering applicable to construction shall be credited to this account.

622. Service inspection and customer instruction.—(A) This account shall include the pay, and office, traveling, and other expenses of service observation forces. It shall include also the expense of inspecting and directly supervising private-branch-exchange service.

(B) This account shall also be charged with the expense of instructing customers in methods of placing calls, including instruction in the use of dial equipment. (See also note A to this account.)

ITEMS

[Note instruction 8]

Card, notices and other literature for instruction of customers in use of dial equipment.

Employment and training of private-branch-exchange operators apart from the regular employment and training of operators.

House service. (See also account 707.)

Investigation and adjustment to traffic service complaints. (See also note B to this account.)

Making test calls.

Observation of handling of traffic by operators. (See also note C to this account.)

Observation of accuracy of measured service charges.

Office supplies.

Postage, printing, and stationery.

Private-branch-exchange service supervisors, pay and expenses of.

Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.

Service watchers, repairs of.

Summarization of service observation data.

Traveling expenses.

NOTE A.—The expense of instructing customers in the use of station equipment in the course of station installation activities shall be included in the amounts charged with the cost of such activities.

NOTE B.—The recording and adjustment of traffic service complaints performed by operating forces in the course of completing calls shall be included in account 624.

NOTE C.—The pay of operators, supervisors, and other employees in central office operating rooms engaged in listening-in work in connection with coaching operators shall be charged to account 624.

624. Operators' wages.—(A) This account shall include the pay of chief operators, assistant chief operators, monitors, supervisors, ticket distributors, switchboard operators, information operators, directory operators, private-branch-exchange operators, telegraph operators, teletypewriter operators, operators employed in quoting toll rates and charges, listening-in work in connection with coaching operators, helping subscribers to place and complete calls together with the incidental recording of subscribers' complaints, operating telephotographic equipment, and all other operators employed in the operation of central-office and private-branch-exchange equipment.

(B) This account shall include also the pay of clerks, stenographers, and messengers engaged in line assignments, peg counts, message register readings, plug counts, preparing time or attendance records, payrolls, intercepting records, panel and jack records, line and station reports, delivering messages or notifying persons of calls, and similar traffic work performed in central offices or centralized outside of central offices. It shall include the pay of such employees while engaged in underlining switchboard jacks and placing and changing number plates and designation strips.

NOTE A.—The pay of operators at public telephone stations shall be charged to account 622.

NOTE B.—Commissions or agency contract allowances paid to exchange agents or managers in lieu of salary, operating expenses, etc., shall be equitably apportioned to construction, maintenance, traffic, commercial, or other accounts affected.

NOTE C.—The pay and expenses of operators, supervisors, chief operators, etc., while attending supplemental training or post-graduate operating schools shall be charged to account 627.

626. Rest and lunch rooms.—This account shall include the cost of operating rest and lunch rooms for central office employees, including the cost of meals provided for such employees. This includes the cost of operating such facilities as rest rooms, quiet rooms, reading rooms, medical rooms, locker rooms, check rooms, sleeping rooms, and dormitories. Credit to this account amounts received for meals served.

Items

[Note instruction 6]

Bedding.
Dishes.
Electric power for cooking, refrigeration, or operating kitchen equipment.
Food supplies.
Fuel for cooking.
Handling orders and bills for supplies.
House service. (See also account 707.)
Ice for refrigeration.
Laundry.
Linen.

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Lunch-room managers, cooks, cashiers, waiters, and kitchen helpers, pay and expenses of.
Medical supplies, including first-aid materials, used in operators' quarters.
Newspapers, magazines, and phonograph records.
Nurses, matrons, and attendants for operators' quarters, pay and expenses of.
Postage, printing, and stationery.
Repairs of furniture and equipment and cost and repairs of individual items of small value or short life.
Silverware.
Uniforms.

NOTE.—The net cost of operating central office rest and lunch rooms used, except incidentally, by other than employees of the traffic department shall be apportioned on an equitable basis to the departments benefited.

627. Operators' employment and training.—This account shall include expenses incurred in the employment and training of operators whether or not a school is maintained.

ITEMS

[Note instruction 2].

Advertising for operators, cost of.
Amounts paid employees for securing new operators.
Pay and expenses of employees engaged in the employment of operators and in interviewing applicants.
Pay and expenses of instructors, messengers, personal supervisors, etc., in schools.
Pay of operators, supervisors, chief operators, etc., attending supplemental training or post-graduate courses.
Pay of student operators rendering no service.
Postage, printing, and stationery.
Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.
Supplies for employment and school work.
Traveling expenses.

NOTE.—The cost of house service for operators' schools shall be charged to account 630. (See also account 707.)

629. Central office stationery and printing.—This account shall include the cost of postage, printing, and stationery for use in central offices except as provided for elsewhere.

ITEMS

[Note instruction 2]

Office supplies.
Postage on toll tickets forwarded by connecting companies.
Postage on toll tickets from central offices to accounting offices.
Printing and distributing tariff and route data, traffic department's proportion of cost of. (See also note A to this account.)
Printing directories of telephone numbers by street addresses, traffic department's expense of. (See also note B to this account.)
Tickets and other central office stationery and supplies furnished connecting companies.
Toll tickets.

NOTE A.—The expense of preparing tariff and route data incurred by the traffic department shall be charged to account 631.

NOTE B.—The cost of such directories prepared by the directory department shall be charged to account 645.

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630. Central office house service.—This account shall include the cost of light, heat, janitor service, and other care of central office traffic quarters except as provided in account 626, "Rest and lunch rooms." (See also account 707.)

ITEMS

[Note instruction 8]

Electricity for elevators, fans, lights, and ventilators. (See also note A to this account.)

Fuel, ice, towels, water, toilet, and other supplies.

NOTE A.—The cost of electricity used in connection with central office equipment installations shall be charged to account 221.

NOTE B.—The cost of house service for central office plant quarters shall be charged to account 604 or to an appropriate clearing account.

631. Miscellaneous central office expenses.—This account shall include the cost of operating central offices not chargeable to other accounts.

ITEMS

[Note instruction 8]

Board and lodging for operators.
Carfare and cabfare for divided tour operators.
Clothing furnished operators in emergencies.
Films for message register readings.
Laundry of equipment used by operators.
Messenger service. (See also note A to this account.)
Paint brushes, paint, and other articles used by traffic employees in switchboard markings.
Photographic supplies for telephotographic work.
Rent of typewriters for central offices.
Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life used in central office operating quarters. (See also note B to this account.)
Time service furnished the company by others.
Traveling expenses of employees whose pay is chargeable to account 624.

NOTE A.—The pay of company employees engaged in central office messenger service shall be charged to account 624.

NOTE B.—Repairs of furniture and office equipment and the cost and repairs of individual items of small value or short life used in central office plant quarters shall be charged to account 604, or to an appropriate clearing account. Such costs for items used in rest and lunch room quarters shall be charged to account 626, and those for items used in operators' employment and school quarters shall be charged to account 627.

632. Public telephone expenses.—This account shall include all traffic expenses, except central office operating expenses, incurred in connection with the operation of public telephones.

ITEMS

[Note instruction 8]

Attendants, clerks, messengers, and operators at public telephones, pay and expenses of.
Employees engaged in direct supervision of the operation of public telephone service, pay and expenses of.
House service. (See also account 707.)
Instruction cards for booths.
Postage, printing, and stationery.
Traveling expenses.
Uniforms.

NOTE.—Commissions, percentages of receipts, and flat sums paid for occupancy privileges for public telephones shall be charged to account 643.

633. Other traffic expenses.—This account shall include all traffic expenses not properly chargeable to other accounts.

NOTE A.—Rent paid for central office shall be charged to account 671.

NOTE B.—Traffic expenses incurred in the operation of special-type equipment, such as public-address systems, telephotographic, radio broadcasting, and receiving, motion-picture and public-demonstration equipment, shall be charged, so far as practicable, to the traffic expense accounts provided for the expenses of regular telephone operations.

634. Joint traffic expenses—Dr.—This account may include amounts payable to other telephone companies for joint traffic expenses, as provided in instruction 62.

635. Joint traffic expenses—Cr.—This account may include amounts receivable from other telephone companies for joint traffic expenses, as provided in instruction 62.

III. Commercial Expenses

640. General commercial administration.—This account shall include the pay, office, traveling, and other expenses of officers directly in charge of the general administration of the commercial department either for the company as a whole or a territorial subdivision; also the pay and expenses of their assistants and office forces.

Items

[Note instruction 3]

Commercial surveys, forecasts, rate-plain studies, and development studies. (See also note B to this account.)

General, division, and district commercial managers, supervisors, superintendents, and engineers, pay and expenses of. (See also notes A and B to this account.)

House service. (See also account 707.)

Office supplies.

Postage, printing, and stationery.

Preparing, printing, and distributing tariff and route data, commercial department's expense of.

Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.

Traveling expenses.

NOTE A.—The pay and expenses of an employee engaged in direct supervision of commercial activities the cost of which is provided for in specific accounts, such as a manager in direct charge of local commercial operations, an advertising manager, a supervisor in direct charge of a group of salesmen, a directory manager, or a representative in charge of connecting company relations shall be charged to the account or accounts provided for such costs.

NOTE B.—The cost of commercial engineering applicable to construction shall be credited to this account.

642. Advertising.—This account shall include expenses incurred in commercial advertising activities, including expenses incurred in giving public demonstrations of telephones, switchboards, etc.

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Items

[Note instruction 6]

Announcements to customers in regard to proposed or other rate changes. (See also note A to this account.)

Commercial advertisements in newspapers and periodicals. (See also note A to this account.)

Commercial advertising matter such as posters, bulletins, booklets, and related items. (See also note A to this account.)

Electric current consumed in illuminating public telephone signs.

Exhibits in connection with industrial expositions, expenses of. (See also note B to this account.)

House service. (See also account 707.)

Lecture and demonstration tours for promotion purposes. (See also note B to this account.)

Managers and their office forces in charge of advertising and publicity, pay and expenses of.

Motion pictures.

Office supplies.

Postage, printing, and stationery.

Promotional advertising in the company's directories, such as colored page inserts, when additional printing and binding costs are incurred.

Radio programs.

Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.

Traveling expenses.

Window displays.

NOTE A.—The cost of newspaper advertisements, literature, etc., other than for commercial advertising purposes, such as advertisements of stock and bond issues, advertising for operators, notices of dividends declared, and advertisements for sale of directory advertising or to popularize and increase use of classified sections of directories, shall be charged to the accounts appropriate for such costs.

NOTE B.—The pay and expenses of employees performing incidental services in connection with industrial exhibits and public demonstrations of telephones, switchboards, etc., shall be included in the accounts chargeable with the pay and expenses of the employees' regular activities. (See also instruction 6h.)

NOTE C.—The cost of flags, painting, and similar expenses of decorating buildings shall be charged to account 707 or to the appropriate expense account of the department concerned.

643. **Sales expense.**—This account shall include expenses incurred in canvassing for new business or for changing or renewing existing service, also in interviewing customers for promoting the further use of service.

Items

[Note instruction 6]

Canvassers and salesmen, pay and expenses of. (See also note to this account.)

Canvassing for purpose of regrading service or for sale of additional service.

Commercial service studies of subscribers' service.

House service. (See also account 707.)

Office supplies.

Postage, printing, and stationery.

Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.

Traveling expenses.

NOTE.—The pay and expenses of employees engaged in securing advertisements for directories shall be charged to account 642 or account 643, as may be appropriate.

644. **Connecting company relations.**—This account shall include expenses incurred in developing the interchange of business and

other promotion of relations with connecting companies. This includes the pay and expenses of commercial representatives and their office forces engaged in the negotiation or revision of traffic agreements, assisting connecting companies in the development of toll business and similar promotion of relations with connecting companies.

ITEMS

[Note instruction 6]

Connecting company agents or representatives and their office forces, pay and expenses of.
House service. (See also account 707.)
Office supplies.
Postage, printing, and stationery.
Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.
Traveling expenses.

645. Local commercial operations.—This account shall include the pay, office, traveling and other expenses of employees engaged in local commercial operations other than promotion or directory. This includes employees of business and collection offices engaged in preparing, changing and handling contract or service orders, collecting revenue and handling miscellaneous commercial relations with customers.

ITEMS

[Note instruction 6]

Badges.
Business office signs on windows, doors, etc.
Coin box collection, guards and supervisors of coin box collections, pay and expenses of.
Customers' accounts, cost of keeping and billing, when performed in the course of local commercial operations. (See also note C to this account.)
Fees paid banks or others for collection of customers' bills. (For law expenses see account 624.)
House service. (See also account 707.)
Managers in charge of local commercial operations, supervisors, counter men, bookkeepers, cashiers, clerks, and collectors, pay and expenses of. (See also note C to this account.)
Office supplies.
Postage, printing, and stationery.
Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.
Traveling expenses.

NOTE A.—This account shall include the entire pay and expenses of employees in business offices who are only incidentally engaged in promotion or directory work. If such employees are assigned all or a part of their time to promotion or directory work equitable portions of their pay and expenses shall be charged to the accounts provided for such expenses. (See also instruction 6.)

NOTE B.—The cost of duplicating, recording and handling contract or service orders after preparation by the commercial department shall be charged to the accounts of the department incurring the expense.

NOTE C.—When customers' accounts are kept and bills rendered by the accounting department, the expense involved, including pay and expenses of bookkeepers and clerks, shall be charged to account 646.

646. Public telephone commissions.—This account shall include amounts paid, either in the form of percentages of receipts, flat

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amounts deducted from receipts or other specified sums to the owners or tenants of premises upon which attended and nonattended public and semipublic telephone stations are located, as general compensation for occupancy privileges, light, heat, attendance and all services rendered incident to the furnishing of service from such stations.

NOTE.—The pay of operators and other attendants employed by the company at public telephone stations shall be charged to account 602.

649. Directory expenses.—This account shall include expenses incurred in preparing copy, printing, binding, and distributing directories, and the cost of securing advertisements for directories. It shall include also the cost of directories of other companies purchased for the use of the company or for distribution or sale to its customers. This account shall be credited with amounts received as salvage on old directories. (See also account 132.)

Items

[Note instruction 5]

Advertisements for promotion of directory advertising.
Commissions paid employees or agents for securing directory advertisements.
Directory covers.
Directory managers, clerks, advertising salesmen, and other employees of the directory department, pay and expenses of.
House service. (See also account 707).
Maintaining directory delivery records.
Office supplies.
Official branch exchange directories prepared by directory department, cost of.
Postage, printing, and stationery.
Preparing and printing special editions of directories, including addenda thereto, by the directory department for use of traffic department. (See also note C to this account.)
Preparing and printing street address, toll and other special directories, including addenda thereto, by directory department. (See also note C to this account).
Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.
Transportation and distribution of directories, cost of.
Traveling expenses.

NOTE A.—All directory expenses may be initially charged to account 122, but shall be cleared to account 649 during the months to which such expenses apply.

NOTE B.—Receipts from the sale or furnishing of new directories, either of a company's own issue or directories purchased from others, shall be credited to account 122.

NOTE C.—When such directories are prepared and issued by the traffic department, the costs involved shall be included in the appropriate traffic expense accounts.

NOTE D.—Any additional printing and binding costs incurred on account of the company's promotional advertising in its directories, such as enlarged page issues, shall be charged to account 612.

650. Other commercial expenses.—This account shall include all commercial expenses not properly chargeable to other accounts. It shall include any definitely known amounts of losses of revenue collections due to fire or theft, (a) at customers' coin-box stations, (b) at public or semipublic telephone stations, (c) in the possession

of collectors en route to collection offices, (d) on hand at collection offices, and (e) between collection offices and banks.

NOTE A.—Rent paid for commercial office shall be charged to account 671.

NOTE B.—Commercial expenses incurred in connection with public demonstrations and such service as public address and telephotograph operations shall be charged, so far as practicable, to the commercial expense accounts provided for the expenses of regular telephone operations.

IV. General Office Salaries and Expenses

661. **Executive department.**—This account shall include the pay, office, traveling and other expenses of officers who are engaged in the general administration or management of the company, or its affairs in a territorial subdivision; also the pay and expenses of their assistants and office forces.

This account shall be charged also with salaries, fees, and expenses other than law expenses, of receivers.

Officers and Employees

[Note instruction 6]

Chairman of the board of directors.
Managers—general and division.
President.
Receiver.
Secretary.
Vice president.
Assistants authorized to act for officers of executive department.
Office and staff forces (e. g., staff assistants, secretaries, stenographers, clerks, messengers, office boys, etc.) of officers and employees of executive department.

Expenses and Supplies

[Note instruction 6]

Automobile service, including charges through clearing account 702.
Books and periodicals for office use.
House service. (See also account 707.)
Meals, including payments therefor on account of overtime work.
Membership fees and dues in associations.
Office supplies.
Postage.
Printing.
Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.
Stationery supplies.
Telephone and telegraph service, amounts paid others for.
Traveling expenses.

NOTE.—Membership fees and dues in associations which do not have some direct or intimate relation to the telephone operations of the company shall be charged to account 671, "Miscellaneous income charges."

662. **Accounting department.**—This account shall include the pay, office, traveling and other expenses of officers, their assistants, and office forces, of the accounting department.

OFFICERS AND EMPLOYEES

[Note instruction 5]

Accountant. (See also note to this account.)
Addressograph clerks.
Auditor of disbursements.
Auditor of receipts.
Auditors—general and division.
Billing clerks.
Bookkeeper.
Chief accountant.
Chief statistician.
Chief traveling auditor.
Clerk.
Comptroller.
Division auditor of disbursements.
Division auditor of receipts.
General accountant.
Office manager. (See also note to this account.)
Plant accountant.
Revenue accountant.
Statistician.
Supervisors of methods, bookkeeping, vouchers, payrolls, estimates, etc.
Tax accountant.
Traveling auditor.
Vice president in charge of accounting department.
Assistants authorized to act for officers of accounting department.
Office and staff forces (e. g., staff assistants, secretaries, stenographers, messengers, office boys, etc.) of officers and employees of accounting department.

EXPENSES AND SUPPLIES

[Note instruction 6]

Automobile service, including charges through clearing account 702.
Books and periodicals for office use.
House service. (See also account 707.)
Meals, including payments therefor on account of overtime work.
Membership fees and dues in associations.
Office supplies.
Postage, including that used in mailing bills to customers by accounting department and in forwarding toll tickets to local collection offices.
Printing.
Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.
Stationery supplies.
Telephone and telegraph service, amounts paid others for.
Traveling expenses.

NOTE A.—The expense of accounting performed by employees of operating departments shall be charged to the appropriate accounts of those departments (e. g., the pay and expense of employees of local business offices engaged in keeping and billing customers' accounts shall be charged to account 646). (See also instruction 10.)

NOTE B.—Membership fees and dues in associations which do not have some direct or intimate relation to the telephone operations of the company shall be charged to account 325, "Miscellaneous income charges."

668. **Treasury department.**—This account shall include the pay, office, traveling, and other expenses of officers, their assistants and office forces, of the treasury department.

OFFICERS AND EMPLOYEES

[Note instruction 5]

Cashier. (See also note A to this account.)
Clerk.
Office manager.
Paymaster. (See also note A to this account.)
Supervisors of methods, stock and bond records, coupon payments, etc.
Stock and bond ledger clerks.
Treasurer.
Vice president in charge of treasury department.
Assistants authorized to act for officers of treasury department.
Office and staff forces (e.g., staff assistants, secretaries, stenographers, messengers, office boys, etc.) of officers and employees of treasury department.

EXPENSES AND SUPPLIES

[Note instruction 6]

Automobile service, including charges through clearing account 709.
Books and periodicals for office use.
House service. (See also account 707.)
Meals, including payments therefor on account of overtime work.
Membership fees and dues in associations.
Office supplies.
Postage.
Printing, including stock and bond certificates for transfer purposes. (See also note B to this account.)
Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.
Stationery supplies.
Telephone and telegraph service, amounts paid others for.
Traveling expenses.

NOTE A.—The pay and expenses of cashiers and paymasters employed by operating departments shall be charged to the appropriate accounts of those departments.

NOTE B.—The cost of printing stock certificates in connection with original and additional capital stock issues shall be charged to account 201. The cost of printing bonds in connection with new or additional issues of funded debt shall be accounted for as provided in instruction 15.

NOTE C.—Membership fees and dues in associations which do not have some direct or intimate relation to the telephone operations of the company shall be charged to account 338, "Miscellaneous income charges."

664. Law department.—This account shall include, when not provided for elsewhere, the pay, office and other expenses of officers, their assistants and office forces, and other employees of the law department, the cost of suits and other law costs, including law expenses connected with damages.

OFFICERS AND EMPLOYEES

[Note instruction 5]

Attorneys.
Claim agents, investigators, and adjusters. (See also note A to this account.)
Clerks.
Counsel.
General attorney.
General counsel.
General solicitor.
Law agent.

Law clerks.
Librarian.
Patent attorney.
Solicitor.
Special counsel.
Tax attorney.
Vice President in charge of law department.
Assistants authorized to act for officers of the law department.
Office and staff forces (e. g., staff assistants, secretaries, stenographers, messengers, office boys, etc.) of officers and employees of law department.

EXPENSES AND SUPPLIES

[Note instruction 9]

Automobile service, including charges through clearing account 703.
Agreements, briefs, contracts, legal forms and reports, cost of preparing and printing.
Collecting revenue and other accounts, law expenses in connection with.
Court expenses.
Depositions, cost of taking.
Examination of titles and other expenses incurred in suit to test validity of bond issue. (See also note B to this account.)
Fees and retainers of attorneys not regular employees.
Filing tax reports, passing tax claims, making returns to tax assessors, etc., cost of when handled by law department.
House service. (See also account 707.)
Law books and periodicals.
Law expenses in connection with rate cases or filing or adjustment of rate schedules
Law expenses of receivers.
Meals, including payments therefor on account of overtime work.
Membership fees and dues in associations.
Office supplies.
Postage.
Premiums on surety bonds.
Printing.
Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.
Special fees.
Stationery supplies.
Telephone and telegraph service, amounts paid others for.
Testimony, cost of printing and transcripts of.
Traveling expenses.
Witness fees.

NOTE A.—The pay and expenses of claim agents, investigators and adjusters employed by departments other than the law department shall be charged to the accounts of the department by which they are employed.

NOTE B.—Special law expenses incurred incident to the construction or purchase of telephone plant shall be charged to the appropriate telephone plant accounts; special law expenses incident to the issuance of funded debt shall be accounted for as provided in instruction 15.

NOTE C.—Membership fees and dues in associations which do not have some direct or intimate relation to the telephone operations of the company shall be charged to account 328, "Miscellaneous income charges."

665. Other general office salaries and expenses.—This account shall include the pay, office, traveling, and other expenses of officers, their assistants, and office forces of general offices not properly chargeable to other accounts, such as those engaged in editing magazines or periodicals published in behalf of all departments and employees engaged in detective or protective services for the company's interest as a whole.

EXPENSES AND SUPPLIES

[Note Instruction 6]

House service. (See also account 727.)
Meals, including payments therefor on account of overtime work.
Office supplies.
Postage.
Printing, including cost of printing magazines or periodicals published in behalf of all departments.
Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.
Stationery.
Traveling expenses.

NOTE.—The expenses of miscellaneous general activities when incidentally performed by employees of operating departments shall be included in the accounts of those departments. (See also Instruction 6.)

V. OTHER OPERATING EXPENSES

668. Insurance.—(A) This account shall include the cost, not provided for elsewhere, of commercial insurance to protect the company against losses and damages in its telephone operations. (See also account 131.)

To this account shall be charged:

(1) The amount of insurance premiums paid to insurance companies.

(2) Special costs incurred in procuring insurance, such as brokerage fees, notarial fees, and insurance inspection service, and the pay, traveling, and office expenses of officers, clerks, and other employees of an insurance department.

(B) This account shall include also amounts credited to account 169, "Insurance reserve," for self-carried risks as provided in paragraph (B) of that account.

(C) This account shall include also the amount of insurance premiums covering blanket policies for which there is not available an equitable basis for allocation between the several accounts which may be involved.

(D) A list of representative losses and damages follows, the insurance premiums for protection against which are chargeable to this account when incurred in connection with the company's telephone operations:

LOSSES AND DAMAGES

[Note Instruction 6]

Burglaries, holdups, check alterations, and forgeries.
Damages to the property of others.
Dishonesties of employees and agents.
Fire and other casualties to telephone plant.
Fire and other casualties to telephone plant rented to others, the rents from which are includable in account 504.
Injury to or death of employees.
Injury to or death of persons other than employees.
Loss due to business interruption (i. e., use and occupancy insurance).

Loss of service of employees through death, sickness, injury, or other cause.
Loss of unbilled toll tickets.
Nonperformance of contractual obligations of others.

NOTE.—All losses and damages sustained, including those covered by commercial insurance or reserves carried in account 169 shall be charged to the depreciation reserve, telephone plant, repair, accident and damages, or other appropriate account, according to the character of the losses. Insurance recoverable or chargeable to account 169 on account of losses and damages sustained shall be credited to the account to which the losses and damages are chargeable.

669. Accidents and damages.—(A) This account shall include expenses, not provided for elsewhere, on account of persons killed or injured and property of others damaged in connection with the company's telephone operations.

(B) When an admitted liability arises because of an accident or damage, any portion of such liability, estimated if not known, chargeable to this account (i. e., the amount in excess of the liability insured) shall be charged hereto and credited to account 174, "Other deferred credits." When an estimated liability has been so charged to this account, appropriate adjustments between this account and account 174 shall be made when the extent of the liability has been definitely ascertained. (See also account 174 and instruction 4.)

(C) This account shall be credited and the appropriate property account charged with the amount of such accidents and damages due to construction work. (See also Instruction 22-B-6.)

(D) Accident and damage payments provided for by commercial insurance or by a reserve for self-carried risks shall be credited to this account and charged to the insurer or to the reserve carried in account 169, "Insurance reserve," as appropriate.

Items

[Note instruction 5]

Amounts paid in settlement of personal injury or damage claims.
Damage payments resulting from errors in directory listings, directory advertising errors and traffic service errors. (See also note A to this account.)
Damage to property of others, cost of. (See also note B to this account.)
Fees and expenses of surgeons, doctors, coroners, and undertakers.
Nursing, hospital attendance and medical and surgical supplies, cost of. (See also note C to this account.)

NOTE A.—Refunds of revenue overcharges in connection with such errors shall be charged to the revenue accounts originally credited.

NOTE B.—The cost of incidentally repairing property of others damaged in the course of maintenance or construction work shall be included in the cost of the work.

NOTE C.—Payments to or on behalf of employees, including accident and death benefits, salary, hospital attendance and medical supplies, also salaries, fees and expenses of surgeons, doctors, and nurses, etc., shall be charged to account 672 when coming within the scope of a company's general provision for employees' benefits.

NOTE D.—The pay and expenses of employees performing services in the investigation and adjustment of accident and damage claims shall be included in the accounts of the departments by which such employees are employed.

671. Operating rents.—(A) This account shall include rents payable for the use of space in buildings occupied by the company,

space in conduits, pole line space for attachments, instruments, equipment, and other telephone plant, the rent for which is not provided for elsewhere.

(B) This account shall include also taxes borne by the lessee of property, the rent for which is chargeable to this account.

(C) This account shall include during each accounting period such portion of the book cost of leaseholds or similar interest in telephone property carried in account 211, "Land," as is necessary to cover the proportion of life thereof expired during such period. (See also account 172.)

Items

[Note Instruction 6]

Rents for location of poles, conduits, or cables.
Rents for use of general offices and central and branch telephone offices except rents chargeable to the clearing accounts.
Rents for use of ducts, conduits, and subways.
Rents for use of poles and buildings as supports for telephone circuits.
Rents for telephone instruments and equipment.
Rents for use of circuits.

NOTE A.—Expenses incurred by the company in maintaining and operating property, the rent for which is includable in this account, shall be charged to the operating expense account appropriate for owned property.

NOTE B.—This account shall not include rents provided for in the clearing accounts and in instruction 22-B-6.

NOTE C.—Rents for the exclusive use of telephone operating property held as a whole and operated by the company, such as a complete telephone plant, a complete exchange, or a complete toll system, shall be included in account 308.

672. Relief and pensions.—(A) This account shall include pensions or other benefits paid to active and retired employees, their representatives or beneficiaries, and salaries and expenses incurred in conducting relief, benefit, and general medical departments. It shall include payments to or on behalf of employees on account of injuries or accidental death when such payments come within the scope of a company's general provision for employees' benefits.

(B) If the company has definitely undertaken by contract to pay pensions to employees when regularly retired for superannuation or disability and has established a fund to be held in trust for such pension purposes, the company shall charge to this account monthly amounts determined through the application of equitable actuarial factors to the current pay rolls, which, together with interest accruals on the trust funds, will as nearly as may be, provide for the payment of such pensions, or for the purchase of annuities corresponding thereto. The amounts so charged shall be concurrently credited to a separate subaccount under account 170, "Provident reserve." The amounts accrued in each year shall correspond to the aggregate of the amounts expended directly by the company for pensions or annuities during the year and amounts paid into the trust fund. The company shall maintain a complete record of the actuarial computations through which the accrual each month of its pension liabilities is established.

(C) Upon the adoption of the accrual plan of accounting, pension payments to employees retired before the adoption of such plan shall be charged to an existing pension reserve or to account 413, "Miscellaneous debits to surplus." If a company pays into its pension trust fund the amount of its existing pension reserve, any such amounts in excess of provision for pensions granted prior to the adoption of the accrual plan may be applied in whole or in part to the adjustment of future accrual charges.

(D) Before adopting the accrual plan of accounting for pensions the company shall inform this Commission of the details of its pension plan giving full statement of the facts which in its judgment establish a contractual obligation for pension payments together with the actuarial formula under which it proposes to create its pension trust fund, and also a copy of the declaration of trust under which the fund is established.

(E) No charges to this account shall be made in anticipation of discretionary pension payments in the future.

(F) This account shall include also, under a separate subaccount, amounts accrued to provide for the payment of termination allowances or similar benefits to employees of the company when such employees are laid off because of lack of work and to provide necessary and warranted relief to former employees. Charges to this subaccount shall be made only after approval by this Commission of the company's plan for administering payments for these purposes and of the amount of the accruals. Amounts charged to this subaccount shall concurrently be credited to account 173, "Employment stabilization reserve."

ITEMS

[Note instruction 6]

Accident, sickness, death, and other disability benefits to employees, their representatives or beneficiaries.
Employees of relief, benefit, and general medical departments, pay and expenses of.
Expenses in connection with employees' disability cases, such as hospital, nursing, and medical attendance.
Fees and retainers for medical and similar services incurred by relief, benefit, and general medical departments.
House service. (See also account 707.)
Medical supplies.
Office supplies.
Postage, printing, and stationery.
Premiums paid for group insurance for the benefit of employees or their beneficiaries.
Repairs of furniture and equipment and cost and repairs of individual items of small value or short life.
Traveling expenses.

673. Telephone franchise requirements.—(A) This account shall include the cost not provided for in account 202, "Franchises," of all services, plant, materials and supplies, and similar items, including standard rates for telephone services, furnished to municipalities or other governmental authorities in compliance with

franchises, ordinances, or similar requirements and for which no reimbursement or payment is received by the company. (See also note A to this account.) It shall include the cost of paving and of premiums on bonds required under the general terms of a franchise or ordinance and not in connection with specific construction or maintenance work.

(B) This account shall be charged also each month with the amount necessary to cover such portions of the lives of limited franchises as have expired or been consumed during the month. Amounts so charged to this account shall be credited to account 172, "Amortization reserve," and shall be based upon such a rule as will accumulate by charges equitably distributed throughout the life of any franchise, a reserve that will at the expiration of the life of such franchise equal the original cost thereof.

(C) This account shall include also amounts paid for franchises running for one year or less after acquisition and may include direct charges for franchises acquired at small cost.

(D) Amounts charged to this account involving no direct money outlay, such as standard rates for telephone service rendered without charge, shall be credited to account 676, "Telephone franchise requirements—Cr."

Note A.—The cost of paint, supplies, etc., given as an initial consideration for a franchise running for more than one year shall be charged to account 203.

Note B.—Franchise taxes paid annually or more frequently shall be charged to account 765.

Note C.—The cost of plant used by a municipality without charge, or used by the company in rendering service to a municipality without charge, shall be included in the appropriate telephone plant accounts; maintenance expenses incurred in connection with such plant shall be charged to the appropriate maintenance accounts.

Note D.—The cost of reconstructing or changing the location of plant to conform with municipal requirements, including such work required under the provisions of a franchise or ordinance, shall be charged to the maintenance, telephone plant, and depreciation reserve accounts appropriate for the work performed.

674. General services and licenses.—This account shall include amounts payable for services received under a license agreement, a general service contract, or other arrangement providing for the furnishing of general accounting, engineering, financial, legal, patent, and other general services.

675. Other expenses.—(A) This account shall include all operating expenses not properly chargeable to other accounts.

(B) The cost of patents included in account 203, "Patent rights," shall be amortized by charging this account each month with the amount necessary to cover such portions of the lives of patents as have expired or been consumed during the month. Amounts so charged to this account shall be credited to account 172, "Amortization reserve."

Items

[Note Instruction 8]

Amortization of patents, amounts paid for patents having an estimated service life of one year or less, patents acquired at small cost or in an undeveloped state and patents of doubtful service value.

Amounts paid incident to maintenance of associations of general character maintained on behalf of the company's telephone operations. (See also note A to this account.)

Commissions paid agents for leasing space in others in buildings partly occupied by the company in connection with its telephone operations.

Contributions for charitable or social or community welfare purposes which have a direct or intimate relation to the protection of the property of the company or to the development of its business or to the welfare of its employees.

Cost of publishing reports to stockholders, notices of stockholders' meetings, election of directors, conversion of bonds, and dividends declared.

Cost of valuations, inventories, and appraisals of telephone plant made for rate case purposes, and those taken in compliance with orders of Federal, State or other regulatory authorities. (See also notes B and C to this account.)

Fees and expenses of directors.

Fees of agents for registrations and transfers of outstanding capital stock.

Franks for use of officers and employees, cost of printing.

General audit of company's books by audit company, cost of.

House service furnished for space leased to others when not specifically reimbursed.

Losses from foreign exchange. (See also Instruction 7.)

Loss of current funds due to bank failures.

NOTE A.—Salaries and expenses of employees representing the company in associations of a general character maintained by the company in connection with its telephone operations shall be included in the accounts chargeable with the cost of the regular activities of such employees. Salaries and expenses of employees engaged in work in connection with employees' associations shall be included in the appropriate departmental accounts.

NOTE B.—The cost of valuations, inventories and appraisals taken in connection with the contemplated purchase or sale of property shall be charged to account 139 pending further disposition.

NOTE C.—The pay and expenses of officers and employees performing incidental services in valuations, inventories and appraisals shall be included in the accounts ordinarily charged with their pay and expenses. (See also Instruction 6b.)

NOTE D.—Contributions for charitable or social or community welfare purposes which do not have a direct or intimate relation to the protection of the property of the company or to the development of its business or to the welfare of its employees shall be charged to account 418, "Miscellaneous debits to surplus."

676. **Telephone franchise requirements—Cr.**—This account shall be credited with amounts included in account 673, "Telephone franchise requirements," for which there is no direct money outlay, such as standard rates for telephone service furnished without charge to municipalities in accordance with franchise requirements.

677. **Expenses charged construction—Cr.**—This account shall be credited and the appropriate construction accounts charged with amounts, not provided for elsewhere, representing the portion of operating expenses applicable to construction work. (See also Instruction 22-B-1.)

CLEARING ACCOUNTS

(Note particularly instructions 2-C and 70)

702. Vehicle and other work equipment expense.
704. Supply expense.
705. Engineering expense.
706. Plant supervision expense.
707. House service expense.

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702. Vehicle and other work equipment expense.—(A) This account shall include the expense of operating vehicles and other work equipment, including the expenses of garages, shops, tool rooms, and stables and the amount of depreciation charges applicable to the accounting period for plant classified in account 264, "Vehicles and other work equipment."

(B) This account shall be cleared by adding to the cost of work performed such amounts as will distribute such expense equitably.

ITEMS

[Note instruction 8]

Books and periodicals.
Depreciation of vehicles and other work equipment.
House service. (See also account 707.)
Insurance (see also note to account 668), including that against losses and damages to or by vehicles and other work equipment.
License fees for vehicles and for drivers.
Office supplies.
Overages and shortages in material and supplies for vehicles and other work equipment.
Postage, printing, and stationery.
Rent paid for and repairs of rented vehicles and other work equipment, garages, shops, tool rooms, stables, and other quarters. (See also instruction 23.)
Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.
Repairs of vehicles and other work equipment and cost and repairs of individual items of small value or short life.
Supplies, such as feed, fuel, gasoline, oil, tires, tubes, tire chains, soap, waste, sponges, measures, funnels, electric power, etc., used in the operation of vehicles and other work equipment, garages, shops, tool rooms, and stables.
Supervising officers, and their office and field forces, including inspectors, testers, garage men, and other employees, pay and expenses of.

704. Supply expense.—(A) This account shall include the expenses incurred in connection with the purchase, storage, handling, and distribution of material and supplies which are not allocated to other accounts as incurred.

(B) This account shall be cleared by adding to the cost of material and supplies a suitable loading charge which will distribute the total expense equitably.

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ITEMS

[Note Instruction 6]

Books and periodicals.
Discounts on material, cash and other. (See also note A to this account.)
House service. (See also account 707.)
Overages and shortages in material and supplies which can not be assigned to specific accounts. (See also accounts 130 and 708.)
Insurance (see also note to account 668) including that against losses and damages to material and supply stock.
Losses due to depreciation, breakage, leakage, evaporation, and fire and other casualties to supply stock not assigned to specific accounts nor distributed through the pricing of materials and supplies disbursed.
Office supplies.
Postage, printing, and stationery.
Purchasing agents, superintendents and supervisors of supplies, managers of stores, storekeepers, clerks, and laborers, pay and expenses of.
Rent paid for and repairs of rented storehouses, storerooms, storage yards, and other quarters. (See also instruction 20.)
Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.
Transportation charges, undistributed. (See also note B to this account.)
Traveling expenses.

NOTE A.—So far as practicable, cash and other discounts on material shall be deducted in determining the cost of the particular material to which they relate or credited to the account to which the material is charged.

NOTE B.—Transportation charges on material purchased shall be so far as practicable included as a part of the cost of the particular material to which they relate. Transportation charges on material recovered from plant shall be charged to the account to which the cost of removal is charged.

705. **Engineering expense.**—(A) This account shall include the expenses of the general engineering department.

(B) This account shall be cleared by apportioning the total expenses to the appropriate accounts on the basis of service rendered, as determined by the time devoted to particular jobs or on such equitable basis as may be fixed by the officers of the company.

ITEMS

[Note Instruction 6]

Books and periodicals.
Engineering officials and employees, pay and expenses of.
House service. (See also account 707.)
Office supplies.
Postage, printing, and stationery.
Rent paid for and repairs of rented offices. (See also Instruction 20.)
Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.
Tools and instruments of small value or short life.
Traveling expenses.

706. **Plant supervision expense.**—(A) This account shall include the expense of general supervision of the maintenance and construction of the plant where a department of the company's organization is charged with both maintenance and construction.

(B) This account shall be cleared on the basis of labor supervised except that charges for plant engineering shall be cleared by apportioning such expense to the appropriate accounts on the basis of the

time devoted to particular jobs or on such equitable basis as may be fixed by the officers of the company.

ITEMS

[Note Instruction 6]

Books and periodicals.
House service. (See also account 707.)
Office supplies.
Plant supervising officers and their staffs, including engineers, office and field forces charged with planning for and superintending the work of maintenance and plant reconstruction, pay and expenses of. (See also note to this account.)
Postage, printing, and stationery.
Rent paid for and repairs of rented offices. (See also instruction 28.)
Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.
Traveling expenses.

NOTE.—The pay and expenses of foremen in direct charge of jobs, general foremen and other supervisory employees not engaged in the general supervision of maintenance and construction work, such as local plant administrative employees whose duties are limited as to functions or areas, shall be included in the cost of the work supervised and not charged to this account.

707. **House service expense.**—(A) This account shall include the expenses of operating offices and buildings, whether owned or rented, when such expenses are not allocated, as they are incurred, to the operating expense and other accounts.

(B) This account shall be cleared by apportioning the entire expense to the operating expense and other accounts on the basis of the use made of such property.

ITEMS

[Note Instruction 6]

Building superintendents and others engaged in supervising house service operations, pay and expenses of.
Charging supplies.
Elevator service.
Fuel.
Heat.
Ice.
Janitor service.
Light.
Office supplies.
Postage, printing, and stationery.
Power. (See also accounts 604 and 616.)
Rent paid for and repairs of rented quarters used in the supervision of general house service operations, other than space used by janitors and similar employees in furnishing house service for a particular building. (See also instruction 28.)
Repairs of furniture and office equipment and cost and repairs of individual items of small value or short life.

APPENDIX A

UNITS OF PROPERTY

The following list of units of property shall be used in connection with the accounting provided in instructions 24 and 25 but shall not be considered as determining the classification of the telephone plant involved.

212. Buildings.

A complete building.

An entire roof with or without supporting members.

NOTE A.—A building of irregular shape having more than one roof level may have several isolated roofs, each of which shall be considered an entire roof. In the case of buildings to which lateral extensions have been made, even though having but one roof level, that part of the roof covering an entire section built at one time shall be considered an entire roof.

A complete fire escape.

A complete metal window (i. e., box, frame, and sash).

A boiler, furnace, hot-water heater, or automatic stoker.

A coal or ash conveying system.

An elevator complete with operating mechanism.

A gas-burner system.

A house-lighting or power board.

An oil-burner system.

An oil tank.

The floor covering for one room.

A motor, generator, engine, turbine, pump, compressor, ventilating fan, air washer, elevator drum, or similar item of equipment, with or without associated wiring, control equipment, etc.

NOTE B.—In addition to the above units of property, material (i. e., portions of buildings, equipment, fixtures, etc.) installed and retired, and the labor and incidental costs involved in connection with work of the following character, shall be handled through the telephone plant and depreciation reserve accounts.

(1) Changes in the type of operation of elevator systems, e. g., a change from manual to signal control of cars, from manual to power operation of doors, from low speed to high speed, from direct to alternating current, from hydraulic to electric operation, from one type of signaling or dispatching system to another.

(2) Relocations of toilet rooms, battery rooms, kitchens, terminal rooms, machine rooms, transformer vaults, etc.

(3) Structural changes such as: (a) Reinforcements of floors, roofs, bearing walls, footings, and foundations; (b) additions or relocations of elevator shafts stairways, fire cells, and vaults, but excluding switchboard cable holes and slots; and (c) building alterations required for fire protection and other safety measures.

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(g) Changes in the type of electric current supply, or of ventilating, air conditioning, or distilled systems.

(h) Installing subassemblies.

(i) Replacements of the following character—

(1) Replacements of plumbing or heating pipes (with or without associated valves) except when accomplished by minor repairs or minor relocations of fixtures.

(2) Replacements of all or substantially all of the lighting fixtures (with or without associated wiring and conduit) in one operating or equipment room or in the suite of office space, or one floor of a building.

(3) General replacements (throughout a building or throughout an entire portion thereof) of wire or cable (with or without conduit) or of valves in heating systems (but not mere valves or fixtures) plumbing, heating, or ventilating lines.

221. Central office equipment.

Switchboards, desks, and testboards—

Switchboards (i. e., local, toll, dial system "A," cordless "B," call distributing "B," observing, teletypewriter, etc.)—A complete section or lower unit.

Desks (i. e., operating, observing, testing, etc.)—A complete section.

Testboards, or test and control boards (board type)—A complete section.

Testboards, or test and control boards (rack type)—

All the equipment in one bay.

A complete upper unit.

A complete lower unit.

A complete installation of rack framework for one board.

Test panels—A complete panel.

Test cabinets—A cabinet complete with equipment.

Distributing frames—

Main distributing frames (including wall type)—A complete installation for one central office (in multi-unit offices, for one operating unit).

Intermediate distributing frames—A complete installation for one central office (in multi-unit offices, for one operating unit).

Repeating coil racks—A complete installation for one frame.

Relay rack equipment—

A panel or unit complete with equipment.

All the equipment in one bay, exclusive of any panels or units.

Cut rack equipment—All the equipment on one shelf.

Harness and inside cabling (other rack equipment)—All the equipment in one bay.

Iron framework—A complete line of rack with or without inclosing cabinet or case.

221. Central office equipment—Continued.

Cable—

All of the cables in one run used for the same purpose, such as between—

(1) Main frame and intermediate frame for subscribers' lines.

(2) Main frame and intermediate frame for outgoing trunk multiple.

(3) Intermediate frame and connector frame or final frame for subscribers' lines.

(4) Intermediate frame and answering jacks.

(5) Intermediate frame and switchboard for outgoing trunk multiple jacks.

(6) Intermediate frame and switchboard for subscribers' multiple jacks.

Iron framework—A complete installation of rack for one cable run.

Power equipment—

Frame or rack mounted equipment—

A panel or shelf complete with equipment, such as fuses, meters, control equipment, etc.

Iron framework—A complete line of frame or rack for one fuse board, one power switchboard, etc.

A generator, motor, motor-generator set, gas engine, rectifier, ringing machine, harmonic converter, pole changer, interrupter, power filter, or choke coil.

Storage batteries:

A complete battery with or without rack, cabinet, or counter electric motive force cells.

All positive or all negative plates in an entire battery (i. e., in all cells of a 24-volt battery, in all cells of a Morse battery, etc.).

All tanks or all jars of an entire battery.

A complete battery rack or cabinet, storage or dry.

A complete group of bus bar(usable, or wiring (with or without conduit) such as between—

Battery and fuse panel.

Power switchboard and machines.

Telephone repeater equipment (including testing equipment)—

A complete floor mounted rack type set.

Relay rack mounted equipment—

A panel or unit complete with equipment.

All the equipment in one bay, exclusive of any panels of units.

Coil rack mounted equipment—All the equipment on one shelf.

Iron framework—A complete line of rack.

221. Central office equipment—Continued.

Carrier equipment (telephone, telegraph, repeater, and testing equipment).

A complete floor mounted rack type set.

Relay rack mounted equipment—

A panel or unit complete with equipment.

All the equipment in one bay, exclusive of any panels or units.

A fuse filter.

A complete test table.

Iron framework—A complete line of rack.

Telegraph equipment (printer and manual)—

Telegraph testboards—A complete section or bay.

Duplex, single line telegraph, and polar repeaters—A table or bay complete with equipment.

Metallic telegraph repeaters—

A complete floor mounted rack type set.

A panel or unit complete with equipment.

Voice frequency carrier equipment—A panel or unit complete with equipment.

Voice frequency carrier battery supply apparatus—

A complete bay of equipment.

A complete test table.

Iron framework—A complete line of rack.

Telephotograph equipment—

Table-mounted sending or receiving equipment—

A table complete with equipment.

A complete optical system.

A complete mechanical system.

A complete fork box.

A complete amplifier-modulator box.

Rack-mounted sending or receiving equipment—

A panel complete with equipment.

All the equipment in one bay.

Iron framework—A complete line of rack.

Power equipment—

A complete power board.

A complete storage battery.

Photographic equipment—

A copying camera or a copying, enlarging, and reducing camera, each with or without associated stands, illuminators, and copy boards.

A print washing machine.

A drying cabinet.

A developing, fixing, and washing tank.

Radio equipment—

A complete transmitter.

231. Central office equipment—Continued.

Miscellaneous equipment.

A calculagraph, a master clock, or a secondary clock.

Electrically driven calculagraph and clock systems—A complete installation.

Mechanical or pneumatic time ticket distributing system—A complete installation.

Each complete tool or portable test set the original cost of which was charged to the telephone plant account, such as a plug reamer and sleeker, cam aligning fixture, multiple bank reseating gauge, or shaft straightening tool, a relay adjusting set, line finder set, or wagtail type set.

Each complete item of furniture or other miscellaneous equipment, the original cost of which was charged to the telephone plant account, such as a desk or table equipped with central office equipment, an operator's chair, a complete switchboard platform, an operator's telephone set cabinet, a rotary file or directory cabinet, a ticket cabinet or rack, a tarpaulin with or without cabinet, a portable static observing cabinet, or a holding-time recorder.

Loud-speaking equipment—A complete installation.

Aisle-lighting equipment—A complete installation on one floor.

Rolling ladders—A complete installation for one side of one frame or rack.

Message and traffic register cabinets—A cabinet complete with equipment.

Teletypewriter sets—Units specified under account 221.

Panel dial system equipment—

A complete equipment frame such as line-finder frame, line-switch frame, selector frame, link frame, routine test frame, decoder frame, sender frame or floor alarm board.

Pulse-machine equipment—A complete pulse machine.

Pulse-machine control apparatus—A complete installation controlling a set of pulse machines.

Step-by-step dial system equipment.

A complete equipment frame, such as a line-finder frame, line-switch frame, selector frame, connector frame, or repeater frame.

Key-indicator equipment or key-pulsing equipment.

A complete equipment frame, such as a link or sender frame.

232. [illegible]

NOTE.—When work of the nature of account 232 is performed as a special job in a central office or at a multiple or drill private branch exchange for the purpose of improving or changing the type of the equipment, the material installed and retired and the labor and incidental costs involved shall be handled through the telephone plant and depreciation reserve accounts.

(i) Conversions of one or more switchboard positions, or dial-system frames, from one type to another, such as from subscribers' to toll, subscribers' to rural, toward toll to combined line and recording, manual B to call indicator B, or from manual B switchboard incoming frame to interoffice incoming frame.

(j) Conversions of circuits from one type to another, such as conversions of cord circuits from two-party ringing to four-party selective ringing, semiselective ringing to selective ringing, or from manual recall to flashing recall, and conversions of pistol-sender circuits from nickels to coin and from two digit to three digit.

(k) Replacements of items of one type, with items of a different type for such reasons as improving signaling or transmission characteristics, changing operating methods or increasing the capacity of the office, e. g.:

(a) Replacements of all the relays or repeating coils of one type in a central office with relays or coils of an improved type for the purpose of improving the signaling or transmission characteristics.

(b) Replacements of items of equipment in dial offices because of a change in the method of operation to multiple registration.

(c) Replacements of items of power equipment because of a change in power purchased from direct current to alternating current.

(d) Modifications of the trunk and cord circuits of multiple manual private branch exchange boards necessitated by a cutover of a central office district to dial operation.

(e) Replacements of protectors of one size with protectors of a smaller size on a main distributing frame so that more protectors may be installed in the same space.

(f) Replacements of 20 pair terminal strips on a main distributing frame with 50 pair strips to increase the capacity of the frame.

(g) Replacement of jack strips having 10 jacks per strip with strips having 20 jacks per strip to increase the capacity of a switchboard.

(h) Replacement of keys of one type with keys of a different type to permit more keys to be placed in the same position.

231. Station apparatus.

A complete station.
A desk stand, with or without transmitter, receiver or dial.
A hand set (i. e., transmitter, receiver and handle).
A hand set mounting, with or without dial.
A wall set with or without transmitter, receiver or dial.
A bell box or other subscriber set, such as extension bell, signal horn, etc.
A coin collector with or without transmitter, receiver or dial.
A complete apparatus cabinet.
A complete key cabinet or key box.
An intercommunicating system key.

NOTE.—The cost less salvage of the following items of station apparatus not designated units of property shall be charged to the depreciation reserve account when lost, destroyed, junked, or otherwise disposed of:

A hand set handle.
A transmitter.
A receiver.
A dial.
A dial mounting.
A switching key (individually mounted type).

231. Station apparatus—Continued.

Teletypewriter equipment—

A complete station.
A printer or teletypewriter.
A printer or teletypewriter table or stand.
A base (printer or reperforator).
A cover (printer or reperforator).
A printer unit or typing unit.
A keyboard unit.
A distributor unit.
A transmitter unit.
A perforator unit.
A reperforator unit.
A relay box with equipment.
A motor or motor unit (excluding the motor of a motor generator set).
A motor generator set.
A rectifier unit.
A loop switchboard.
A station signaling set.

Manual telegraph equipment—

A complete station.
A loop switchboard.

Program supply and public address equipment—

A microphone transmitter.
A microphone transmitter mounting.
An amplifier.
A loud speaking receiver.
A horn.
An observer's telephone set.
A complete dynamotor, motor-generator, rectifier or storage battery.
A complete control cabinet, resistor cabinet or junction box.
A battery cabinet.

Rack mounted equipment:

All the equipment in one bay.
A panel complete with equipment.
Iron framework—A complete line of rack.

Portable equipment—A complete item of portable equipment, with or without the carrying case (e. g., an amplifier, a transmitter mixing panel, an oscillator or an equalizer).

Radio receiving s/s and equipment associated therewith—A complete installation.

232. Station installations. (See instruction 25, par. B.)

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233. Drop and block wires. (See instruction 25, par. 5 and account 605, "Repairs of station equipment.")

234. Private branch exchanges.

A complete cordless or nonmultiple switchboard, with or without local storage batteries or cables classified as P. B. X. equipment.

An apparatus cabinet as used with certain nonmultiple boards.

A complete section of an order receiving table.

An order turret (not including the turrets forming part of an order receiving table).

An attendant's cabinet complete with equipment.

A code sending set or code call unit.

A complete teletype switchboard.

An operator's chair.

Multiple private branch exchange equipment and private dial system equipment (except as provided below)—Units specified under account 231.

An equipment cabinet complete with batteries and switching equipment mounted therein, as generally used with a dial system installation of small capacity.

Local storage battery plants of the type used to serve several nonmultiple boards or of the type used with certain small multiple P. B. X. installations—An entire battery with or without cabinet or control apparatus.

Local automatic power plants of the type used to serve a small dial or a small multiple P. B. X.—

A control cabinet, with or without charging or ringing equipment.

An entire battery, with or without cabinet or counter E. M. F. cells.

235. Booths and special fittings.

A booth compartment with or without special fittings or associated furniture and fixtures such as chairs, directory racks, directory tables, and spittoons.

An attendant's desk including equipment or a switchboard.

241. Pole lines.

A pole (i. e., line pole, house pole, guy stub, or pole forming part of A or H fixture), a pole step, or a pole butt with or without [illegible]

A [illegible] (i. e., cedar crossarm, guard arm, or cable [illegible] including [illegible] arms) with or without associated [illegible] and other hardware.

A [illegible] fixture (i. e., a bridge fixture, a bolter or other special river crossing, or long-span fixture) with or without associated [illegible], guys, etc.

242. Cable.

A span of cable with or without associated suspension strand, clamps, rings, etc. (The term "a span" shall include a length of cable from a "Y" splice not located at a pole to a pole or building.)

A section or run of cable with or without associated elements and parts as follows:

(1) Between a manhole, handhole, or service box and a pole, building, fence, wall, or the junction with house cable.

(2) Between manholes, handholes, or service boxes; or between an office cable vault and an office manhole.

(3) Between a cable vault or an office manhole and the junction with the main frame terminating cables.

(4) A section of buried cable 300 feet or more in length, or a section of buried cable between manholes, splicing boxes, or pedestals.

(5) All of a continuous run of one size of house cable. ("All of a continuous run of one size" means a section between splices other than straight splices.)

(6) All of a continuous run of one size of block cable, i. e., cable attached to buildings, walls, or fences. ("All of a continuous run of one size" means a section between splices other than straight splices.)

(7) All of a submarine cable for one crossing, or a section of submarine cable 300 feet or more in length.

(8) A section of underground dig cable between poles and/or buildings, or the appropriate units listed above.

Any length of cable which is a continuation of a unit of cable and is replaced with such unit.

Any length of cable connected with but not a part of a terminal or a case of equipment such as loading coils when replaced with the terminal or case of equipment.

Main frame terminating cables (generally silk and cotton insulated). All the cables including fuses used for terminating one outside cable.

A complete cable terminal, protected or unprotected, with or without associated balcony, pole seat, pedestal, etc.

A pressure contactor terminal with or without contactor.

A house cable terminating frame.

A submarine cable hut or house.

A submarine cable anchorage.

A submarine cable terminating frame.

A fuse pot.

A case of equipment such as loading coils, building-out condensers, carrier line filters, or auto-transformers.

243. Aerial wire.

Two continuous spans or more of one wire with or without associated fastenings, transposition brackets, etc.

A unit of equipment, such as loading coils, building-out condensers, carrier-line filters, or auto-transformers.

An entrance, complete with or without supports.

244. Underground conduit.

A section of conduit—

(1) Between two manholes, handholes, or service boxes.

(2) Between a manhole, handhole, or service box and a pole or building.

(3) Between a central-office cable vault and an office manhole.

(4) Underground pipe—between two poles; between a pole and a building; between two buildings; or units (1) and (2) above.

A manhole, handhole, or service box.

NOTE.—When a manhole is reconstructed, i. e., enlarged or changed in design, the investment representing portions of the manhole removed, whether or not replaced, should be written off to the depreciation reserve account.

261. Furniture and office equipment.

Each complete item of furniture or equipment, the original cost of which was charged to the telephone plant account, such as—

A desk, chair, table, piano, davenport, typewriter, computing machine; a section of bookcase, filing cabinet, shelving, bins, or counter; a rug, a carpet, or other floor covering for one room.

264. Vehicles and other work equipment.

Each complete item of equipment, the original cost of which, was charged to the telephone plant account, such as—

A passenger automobile or truck with or without body; a tractor; a pole jack, splicer's tent or extension ladder; a pole derrick, power winch, earth boring machine, or trailer; a portable test set; a wire measuring machine.

[fol. 1079] (1)

PLAINTIFF'S EXHIBIT A-9

C. & P. TEL. CO. OF B. C.

VS.

WEST ET AL.

U. S. Dist. Ct. Eq. No. 2240

Wit ss: Frainie

Date: ——. Rec. p. —

The Chesapeake and Potomac Telephone Company of Baltimore City

Appraisal of Buildings as of December 31, 1932

Baltimore, Md., April 20, 1933.

The Chesapeake and Potomac Telephone Company of Baltimore City, Baltimore, Maryland.

SIRS:

We, the undersigned, acting jointly as an Appraisal Committee, have made an estimate of the cost of reproducing, as of December 31, 1932, the buildings owned by you in the State of Maryland. On our instructions Messrs. Willard L. Humes and J. Henry Parsons of Salisbury, Maryland, prepared the estimates for the buildings on the Eastern Shore and Mr. John B. Ferguson of Hagerstown, Maryland, prepared the estimates for the buildings located in the western part of Maryland.

Our estimates show the estimated construction cost of each building. In our judgment such estimated cost represents the amount which would have to be paid to builders if these buildings had been constructed as of December 31, 1932. Where the employment of an architect would be necessary we have included the amount of his fee.

In accordance with your instructions we have also estimated the amount of the depreciation actually existing in your buildings. It is our joint judgment that our estimates reflect the conditions actually existing and that such depreciation is not in excess of the amounts we have estimated.

Our estimates of the reproduction cost and of the reproduction cost less depreciation for the individual buildings are attached hereto, the following being a summary thereof:

	Reproduction cost	Reproduction cost less depreciation
In Baltimore City	$1,761,775	$1,662,314
In Maryland Elsewhere	623,238	583,018
Miscellaneous	6,149	5,226
Total	$2,391,162	$2,250,558

Respectfully submitted, Frank H. Frainie, Charles A. Cummins, Wm. F. Chew,

[fol. 1080] (2)

In Baltimore City

Building	Reproduction costs*	Existing depreciation %	Reproduction less depreciation*
541 Patapsco Avenue, Curtis C. O.	$ 31,701	2.7	$ 30,845
108 E. Lexington Street, General Offices	298,060	9.87	268,553
1917-33 Madison Avenue, Lafayette C. O.	130,514	2.34	127,457
3913 Cold Spring Lane, Liberty-Forest C. O.	113,678	4.45	108,619
1915 Madison Avenue, Madison C. O.	71,189	6.4	66,633
5 Light Street, Plaza-Calvert-Toll C. O.	603,758	3.49	582,687
216 East 31st Street, University-Belmont-Chesapeake C. O.	189,881	3.8	182,666
801 St. Paul Street, Vernon C. O.	115,419	7.54	106,716
126 N. Wolfe Street, Wolfe-Broadway C. O.	133,282	6.2	125,019
806 S. Charles Street, South C. O.	18,244	25.15	13,656
1613-15 W. Baltimore Street, Gilmor C. O.	56,049	11.75	49,463
Total	$1,761,775	5.65	$1,662,314

* Exclusive of Telephone Company's Undistributed Construction Costs.

In Maryland Elsewhere

Building	Reproduction costs*	Existing depreciation %	Reproduction less depreciation*
Annapolis	$17,882	8.6	$16,344
Arbutus	11,189	4.12	10,728
Aberdeen	5,224	22.3	4,059
Bethesda, Wisconsin-Bradley	47,771	1.65	46,983
Belair	7,462	9.94	6,720
Belair Storehouse	2,448	15.0	2,081
Cockeysville	6,522	25.6	4,852
Darlington	2,512	31.14	1,730
Dundalk	28,320	2.8	27,527
Elkridge	3,803	18.88	3,085
Hyattsville	164,895	3.00	159,948
Pikesville	7,443	7.67	6,872
Silver Spring	30,439	2.91	29,553
Towson	10,876	10.0	9,788
Wilna	2,860	22.86	2,206
Cambridge	17,734	7.63	16,381
Denton	13,518	11.15	12,011
Easton	15,750	7.72	14,534
Elkton	9,976	9.33	9,045
Hillsboro	1,689	19.7	1,357
Ridgely	2,429	11.25	2,156
Salisbury	54,332	4.32	51,985
Cumberland (C. O.)	53,356	6.6	49,835
Cumberland (Dist. Office)	4,995	15.4	4,226
Frederick	20,413	8.6	18,657
Hagerstown (C. O.)	46,446	5.3	43,984
Hagerstown (Dist. Office)	13,108	16.8	10,906
Sykesville	8,708	10.4	7,802
Westminster	11,138	31.2	7,663
In Maryland Elsewhere	$623,238	6.45	$583,018

* Exclusive of Telephone Company's Undistributed Construction Costs.

[fols. 1082–1087] (4)

The Chesapeake and Potomac Telephone Company of Baltimore City

Appraisal as of December 31, 1932

Miscellaneous Structures

Buildings	Reproduction costs 12-31-32 (as per stipulation March 15, 1934)	Estimated depreciation	Reproduction cost less depreciation *
Aberdeen Storehouse	$ 71		
Arbutus Garage	461		
Baltimore, Elgin Ave. & Payson St.	2,737		
Cambridge Garage	302		
Cockeysville Pumphouse	51		
Cockeysville Garage	253		
Elkridge Storehouse	20		
Frederick Storehouse	475		
Pikesville Garage	416		
Ridgely Garage	520		
Sykesville Garage	555		
Westminster Storehouse	253		
Wilna Storehouse	35		
Total	$6,149	15%	$5,226

[fols. 1088-1108] 10

The Chesapeake and Potomac Telephone Company of Baltimore City

Appraisal of Buildings as of December 31, 1932

Plaza Central Office Building

Location: 5 Light Street, Baltimore, Md.

Construction: 11-story steel structure, with tile arches; brick exterior walls; fireproof.

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* Exclusive of Telephone Company's Undistributed Construction Costs.

Item	Reproduction Cost*	Existing depreciation %
Excavation	$ 6,278	0.0
Foundation and Footings	6,680	1.0
Reinforced Concrete and Cement	17,139	1.0
Waterproofing and Dampproofing	486	1.0
Cut Stone	16,606	3.0
Brick Masonry	100,039	1.0
Architectural Terra Cotta	13,860	5.0
Terra Cotta and Tile Partitions	5,361	1.0
Marble, Tile, Terrazzo and Slate	18,162	2.5
Lathing and Plastering	31,998	5.0
Carpentry and Millwork	14,158	5.0
Roofing and Sheet Metal	1,539	17.0
Structural Steel	96,325	1.0
Miscellaneous and Ornamental Iron	17,967	5.5
Metal Doors, Windows and Sash	32,681	1.0
Glass and Glazing	5,466	3.0
Painting	10,190	36.0
Hardware	2,132	5.0
Plumbing	22,156	2.0
Heating	35,686	7.0
Electric Wiring and Fixtures	24,494	5.0
Elevators	13,000	10.0
Job Overhead	25,400	3.49
Sub-total	$517,803	3.49
Builder's Commission 10%	$51,780	3.49
Construction Costs	$569,583	3.49
Architect's Fee 6%	34,175	3.49
* Reproduction Cost New	$603,758	3.49
Existing Depreciation	$21,071	
* Reproduction Cost Less Depreciation	$582,687	

* Exclusive of Telephone Company's Undistributed Construction Costs.

[fols. 1109-1116] (36)

The Chesapeake and Potomac Telephone Company of Baltimore City

Appraisal as of December 31, 1932

Buildings Located on the Eastern Shore of Maryland

Buildings	Construction costs 12-31-32*	Architects' fees	Reproduction costs including architects' fees 12-31-33
Cambridge	$16,730	$1,004	$17,734
Denton	13,518	.....	13,518
Easton	15,750	.....	15,750
Elkton	9,411	565	9,976
Hillsboro	1,689	.....	1,689
Ridgely	2,429	.....	2,429
Salisbury	51,257	3,075	54,332
Construction Costs	$110,784*		
Reproduction Costs			$115,428

(Exclusive of Telephone Company's undistributed Construction Costs.)

*As per stipulation March 15, 1934.

[fols. 1117-1124] (46)

The Chesapeake and Potomac Telephone Company of Baltimore City

Appraisal as of December 31, 1932

Buildings Located in Western Maryland

Buildings	Construction costs 12-31-32*	Architects' fees	Reproduction costs including architects' fees 12-31-33
Cumberland C. O.	$50,336	$3,020	$53,356
Cumberland Dist. Office	4,995	.....	4,995
Hagerstown C. O.	43,817	2,629	46,446
Hagerstown Dist. Office	13,108	.....	13,108
Frederick	19,258	1,155	20,413
Sykesville	8,215	493	8,708
Westminster	11,138	.....	11,138
Construction Costs	$150,867*		
Reproduction Costs			$158,164

(Exclusive of Telephone Company's undistributed Construction Costs.)

[fol. 1125] Plaintiff's Exhibit A-10

C. & P. Tel. Co. of B. C.

v.

West et al.

U. S. Dist. Ct. Eq. No. 2240

Witness: Frainie. Date: 3-19-34. Rec. p. —.

The Chesapeake and Potomac Telephone Company of Baltimore City.

Appraisal of Buildings as of December 31, 1933

Baltimore, Md., March 14, 1934.

The Chesapeake and Potomac Telephone Company of Baltimore City, Baltimore, Maryland.

Sirs:

We, the undersigned, acting jointly as an Appraisal Committee, have made an estimate of the cost of reproducing,

*As per stipulation March 15, 1934.

as of December 31, 1933, the buildings owned by you in the State of Maryland. The buildings in Baltimore City, those adjacent to Baltimore City and Washington have been reestimated by applying the cost units prevailing as of December 31, 1933 to the same quantities, as developed in our appraisal as of December 31, 1932.

At your request we have included the buildings on the Eastern Shore and in Western Maryland and the group of buildings in Central Maryland at the reproduction cost new as of December 31, 1932. It is our opinion, however, that the reproduction costs of this group of buildings as of the date of the appraisal would be considerably in excess of the amounts included in this report.

In our judgment such estimated cost represents a conservative estimate of the amount which would have to be paid to builders if these buildings had been constructed as of December 31, 1933. Where the employment of an architect would be necessary we have included the amount of his fee.

In accordance with your instructions we have also estimated the amount of the depreciation actually existing in your buildings. It is our joint judgment that our estimates reflect the conditions actually existing and that such depreciation is not in excess of the amounts we have estimated.

Our estimates of the reproduction cost and of the reproduction cost less depreciation for the individual buildings are attached hereto, the following being a summary thereof:

	Reproduction cost	Reproduction cost less depreciation
In Baltimore City	$2,097,889	$1,966,557
In Maryland Elsewhere	664,589	617,638
Miscellaneous	6,149	5,226
Total	$2,768,627	$2,589,421

Respectfully submitted, Frank H. Frainie. Charles A. Cummins.

[fol. 1126] (2)

The Chesapeake and Potomac Telephone Company of Baltimore City

Appraisal as of December 31, 1933

Buildings in Baltimore City

Building	Reproduction costs*	Existing depreciation %	Reproduction less depreciation*
541 Patapsco Avenue, Curtis C. O.	$37,034	3.41	$35,771
108 E. Lexington St., General Offices	359,860	10.38	322,507
1917-33 Madison Ave., Lafayette C. O.	151,386	2.53	147,556
3913 Cold Spring Lane, Liberty-Forest C. O.	133,578	5.28	126,525
1915 Madison Avenue, Madison C. O.	78,352	7.74	72,288
5 Light Street, Plaza-Calvert-Toll C. O.	732,622	3.93	703,830
216 East 31st Street, University-Belmont-Chesapeake C. O.	225,614	4.44	215,597
801 St. Paul Street, Vernon C. O.	134,599	7.88	123,993
126 N. Wolfe Street, Wolfe-Broadway C. O.	157,102	7.93	144,644
806 S. Charles Street, South, C. O.	22,494	25.17	16,832
1613-15 W. Baltimore Street, Gilmor C. O.	65,248	12.62	57,014
Total	$2,097,889		$1,966,557

* Exclusive of Telephone Company's Undistributed Construction Costs.

[fol. 1127] (3)

The Chesapeake and Potomac Telephone Company of Baltimore City

Appraisal as of December 31, 1933

Buildings in Maryland, Outside of Baltimore City

Buildings	Reproduction costs*	Existing depreciation %	Reproduction less depreciation*
Arbutus	$13,582	4.61	$12,956
Dundalk	33,811	3.38	32,668
Pikesville	9,003	8.92	8,200
Towson	13,296	10.38	11,916
Annapolis	20,848	11.29	18,494
Hyattsville	182,499	3.84	175,491
Silver Spring	33,958	2.13	33,235
Bethesda (Wisconsin-Bradley)	53,169	1.98	52,116
Cumberland C. O.	53,356		
Hagerstown C. O.	46,446		
Cumberland (Dist. Office)	4,995		
Hagerstown (Dist. Office)	13,108		
Frederick	20,413		
Sykesville	8,708		
Westminster	11,138		
Total	$158,164	10.5	$141,564
Cambridge	17,734		
Denton	13,518		
Easton	15,750		
Elkton	9,976		
Hillsboro	1,689		
Ridgely	2,429		
Salisbury	54,332		
Total	$115,428	7.89	$106,268

* Exclusive of Telephone Company's Undistributed Construction Costs.

Building	Reproduction costs *	Existing depreciation %	Reproduction less depreciation *
Aberdeen	5,224		
Bel Air C. O.	7,462		
Bel Air Storehouse	2,448		
Cockeysville	6,522		
Darlington	2,512		
Elkridge	3,803		
Wilna	2,860		
Total	$30,831	19.79	$24,730
Outside Baltimore City	$664,589		$617,638

[fols. 1128-1133] (4)

The Chesapeake and Potomac Telephone Company of Baltimore City

Appraisal as of December 31, 1933

Miscellaneous Structures

Buildings	Reproduction costs 12-31-33 (as per stipulation March 15, 1934)	Estimated depreciation	Reproduction cost less depreciation
Aberdeen Storehouse	$71		
Arbutus Garage	461		
Baltimore, Elgin Ave. & Payson St.	2,737		
Cambridge Garage	302		
Cockeysville Pumphouse	51		
Cockeysville Garage	253		
Elkridge Storehouse	20		
Frederick Storehouse	475		
Pikesville Garage	416		
Ridgely Garage	520		
Sykesville Garage	555		
Westminster Storehouse	253		
Wilna Storehouse	35		
Total	$6,149	15%	$5,226

* Exclusive of Telephone Company's Undistributed Construction Costs.

[fols. 1134–1147] December 31, 1933

Plaza Central Office Building

Location: 5 Light Street, Baltimore, Md.

Construction: Eleven-story steel structure, with tile arches, brick exterior walls, fireproof.

Item	Dec. 31, 1933 reproduction cost–new	Existing depreciation %	Actual existing depreciation	Reproduction cost–less depreciation
Job Overhead	See below			
Excavation	7,791.00	0.0	xxxxx	7,791.00
Foundation & Footings	7,307.00	1.0	73.00	7,234.00
Reinforced Concrete & Cement	24,501.00	1.0	245.00	24,256.00
Waterproofing & Dampproofing	608.00	1.0	6.00	602.00
Cut Stone Work	18,587.00	3.0	558.00	18,029.00
Brick Masonry	112,469.00	1.0	1,125.00	111,344.00
Architectural Terra Cotta	15,960.00	5.0	798.00	15,162.00
Terra Cotta & Tile Partitions	6,683.00	1.0	67.00	6,616.00
Marble, Tile, Terrazzo & Slate	27,274.00	2.5	682.00	26,592.00
Lathing & Plastering	48,825.00	5.0	2,441.00	46,384.00
Carpentry & Millwork	18,199.00	5.5	1,001.00	17,198.00
Roofing & Sheet Metal	1,717.00	17.0	292.00	1,425.00
Structural Steel	114,875.00	1.0	1,149.00	113,726.00
Misc. & Ornamental Metal	20,277.00	5.5	1,115.00	19,162.00
Metal Doors, Windows & Sash	36,428.00	1.0	364.00	36,064.00
Glass & Glazing	6,464.00	4.0	259.00	6,205.00
Painting	12,737.00	50.0	6,369.00	6,368.00
Hardware	2,326.00	5.0	116.00	2,210.00
Plumbing	23,466.00	2.25	528.00	22,938.00
Heating	44,312.00	7.0	3,102.00	41,210.00
Electric Wiring & Fixtures	30,784.00	5.0	1,539.00	29,245.00
Elevators	16,500.00	10.0	1,650.00	14,850.00
Mail Chute	xxxxx	xxx	xxxxx	xxxxx
Total Cost, Less Job Overhead	598,090.00		23,479.00	574,611.00
Job Overhead	30,231.00	3.93	1,188.00	29,043.00
Total, incl. Job Overhead	628,321.00		24,667.00	603,654.00
Builder's Commission—10%	62,832.00			
Total Construction Cost	691,153.00			
Architect's Fee—6%	41,469.00			
*Reproduction Cost New	732,622.00			
Existing Depreciation		3.93	28,792.00	
*Reproduction Cost Less Depreciation				703,830.00

* Exclusive of Telephone Company's Undistributed Construction Costs.

[fol. 1148] (24)

The Chesapeake and Potomac Telephone Company of Baltimore City

Appraisal as of December 31, 1933

Buildings Located in Western Maryland

Buildings	Construction costs 12-31-33*	Architects' fees	Reproduction costs including architects' fees 12-31-33
Cumberland C. O.	$ 50,336	$3,020	$ 53,356
Cumberland Dist. Office	4,995	....	4,995
Hagerstown C. O.	43,817	2,629	46,446
Hagerstown Dist. Office	13,108	....	13,108
Frederick	19,258	1,155	20,413
Sykesville	8,215	439	8,708
Westminster	11,138	....	11,138
Construction Costs	$150,867		
Reproduction Costs			$158,164

(Exclusive of Telephone Company's undistributed Construction Costs.)

[fols. 1149-1153] (25)

The Chesapeake and Potomac Telephone Company of Baltimore City

Depreciation on Western Maryland Buildings

Inspected Buildings

	Reproduction cost	Existing depreciation 12-31-32 %	Existing depreciation 12-31-33 %
Cumberland C. O.	$53,356	6.6	7.35
Cumberland Dist. Office	4,995	15.4	16.12
Hagerstown C. O.	46,446	5.3	6.13
Hagerstown Dist. Office	13,108	16.8	17.37
Total	$117,905	7.59	8.35

The increase as of December 31, 1933, over the actual depreciation ascertained as of December 31, 1932 is 10%.

* As per stipulation March 15, 1934.

Total Buildings

	Reproduction cost	Existing depreciation 12-31-32 %	Existing depreciation 12-31-33 %	Reproduction cost less depreciation 12-31-33
Cumberland C. O.	$53,356	6.6		
Cumberland Dist. Ofc.	4,995	15.4		
Hagerstown C. O.	46,446	5.3		
Hagerstown Dist. Ofc.	13,108	16.8		
(a) Frederick	20,413	8.6		
(a) Sykesville	8,708	10.4		
(a) Westminster	11,138	31.2		
Total	$158,164	9.55	10.5	$141,564

[fol. 1154] (30)

The Chesapeake and Potomac Telephone Company of Baltimore City

Appraisal as of December 31, 1933

Buildings Located on the Eastern Shore of Maryland

Buildings	Construction costs 12-31-33*	Architects' fees	Reproduction costs including architects' fees 12-31-33
Cambridge	$ 16,730	$1,004	$ 17,734
Denton	13,518	....	13,518
Easton	15,750	....	15,750
Elkton	9,411	565	9,976
Hillsboro	1,689	....	1,689
Ridgley	2,429	....	2,429
Salisbury	51,257	3,075	54,332
Construction Costs	$110,784		
Reproduction Costs			$115,428

(Exclusive of Telephone Company's undistributed Construction Costs.)

[fols. 1155 & 1156] (31)

The Chesapeake and Potomac Telephone Company of Baltimore City

Depreciation on Eastern Shore Buildings

Based on inspection of the Salisbury building, the existing depreciation as of December 31, 1933, was determined

* As per stipulation March 15, 1934.

to be an increase in such depreciation as of December 31, 1932.

December 31, 1932	4.32
December 31, 1933	4.94

Increase in actual depreciation 14.4%.

Increase applied to composite percentage of the group of buildings.

	Reproduction cost	Existing depreciation 12-31-32 %	Existing depreciation 12-31-33 %	Reproduction cost less depreciation 12-31-33
(a) Cambridge	$17,734	7.63		
(a) Denton	13,518	11.15		
(a) Easton	15,750	7.72		
(a) Elkton	9,976	9.23		
(a) Hillsboro	1,689	19.70		
(a) Ridgely	2,429	11.25		
Salisbury	54,332	4.32		
Total	$115,428	6.9	7.89	$106,268

[fol. 1157] (33)

The Chesapeake and Potomac Telephone Company of Baltimore City

Buildings	Reproduction costs* 12-31-33	Existing depreciation %	Reproduction cost less depreciation * 12-31-33
Aberdeen	$ 5,224		
Bel Air C. O.	7,462		
Bel Air Storehouse	2,448		
Cockeysville	6,522		
Darlington	2,512		
Elkridge	3,803		
Wilna	2,860		
Total	$30,831	19.79	$24,730

The above buildings have been included at the Reproduction Cost and Reproduction Cost less depreciation determined and ascertained as of December 31, 1932, it being the opinion of the Appraisal Committee that any increase in the aggregate depreciation existing in the buildings as of December 31, 1933 would be more than offset by the increase in the aggregate Reproduction Cost.

* Exclusive of Telephone Company Undistributed Construction Costs.